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# How to Use Foundation in the Production of Cut Comb Honey

By Jas. E. Hilbert,  
Michigan.

THE use of foundation for the production of cut comb honey is increasing each season and many questions are asked about how to avoid warping and waving in the finished combs. Of course improvements are made each year in producing cut comb honey but after fifteen years, we have developed a method of putting in foundation that results in nearly perfect combs.

Many foundations are better than others in cut comb honey production and you will find that a foundation made of pure beeswax with high cell walls, giving a rigid effect to the sheet, prevents much warping and the high walls seem to invite the bees more than a smooth type of foundation. We recommend, therefore, a foundation made especially for cut comb honey production.

Foundation should not be put in frames too far ahead of giving them to the bees. It seems to dry out and warp and the bees do not take it as quickly as foundation which has just been put in. This may explain some

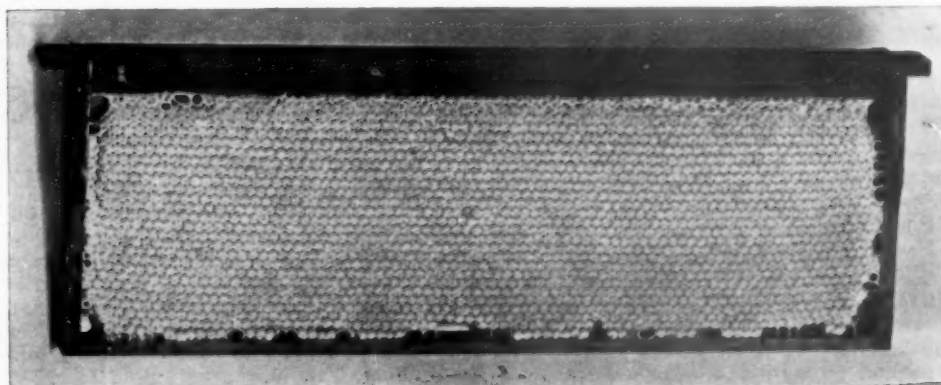
of the reason for warped combs because the foundation is put in the frames too far ahead of putting the supers on the bees. While you may save some labor in putting up the foundation ahead, when you are not busy, it does not pay, for the loss will be several times the amount gained.

The size of foundation we use is the  $4\frac{1}{2} \times 16\frac{1}{2}$  for standard 5% shallow frames. This size generally leaves room at both ends and at the bottom of the frames so the foundation does not touch. The bottom is most important as the foundation should be supported only at the top bar and extend down to within a half inch of the bottom bar; no closer for best results. The end bars should be at least  $\frac{1}{4}$  inch from the foundation and  $\frac{1}{4}$  inch is not too far. Do not use slotted bottom bars with the foundation extending through the slot or you are sure to get buckling at the bottom. One side of the finished comb may be smooth while the other will have a crease the full length of the comb.

Since the honey is only cut within about  $\frac{1}{4}$  inch of the end or top and bottom bars, there is no need to induce bees to build an extra comb at these points since it will only be trimmed out into the melting pan and sold at extracting prices. The more perfect your combs are for the purpose of cut comb the more the bees will produce and the less trimming you will have.

Note the finished comb shown here illustrating how the bees have tied the bottom and ends of foundation to the frame when the comb was built. See what a small amount of trim will be left after the cuts are made.

There are other reasons for poor results in producing nice combs of honey. Do not crowd your bees too much, just enough to get them started on the foundation. Then be sure to give room enough to prevent them building the combs too thick. When this happens, they will also build comb down over the bottom bars and make considerable burr comb which



Even surfaced combs that cut without waste are essential in producing cut-comb honey. This is an ideal comb.

is a bad feature. It produces extra honey that will only be trimmed out into the extracting pan and it means that you will have a dripping mess on your supers when they are stacked up if papers are not put between them.

If escape boards are used to take off the honey, the bees will clean up this mess. If this happens be sure to use escape boards in removing the honey. If you use the carbolic acid system, the combs will be more or less sticky on the surface and the only way to clean them up is to put them back on the bees a few minutes some day when there is not much nectar coming in and remove them again with smoke or acid. If this is done, it will be necessary to watch them very close and work fast to prevent the bees from chewing off some cap-pings.

In addition to not crowding the bees, we wish to impress the fact that on the other hand they are not given too much room or too many supers to result in poor finish should the flow be cut off. Combs not finished will then be fit only for extracting. So, to get the best combs of honey, watch the super supply more often than in extracted honey production.

Fastening foundation into the frames has an effect on results and care should be used not to use wax too hot and not use too much since it makes cutting along the top bar harder where extra wax is used and also this wax is wasteful.

If you have considerable foundation to put in, several forms or racks may be used so the wax will cool completely before the frame is handled or placed in the super. A simple way is to take a board as long as you wish to have forms. A frame being about 18 inches, you will need about 20 or 22 inches of board for each form. So if you wish room for 5 frames use a board 5 times 20 inches long. Place your 5 frames on this board and inside of each one nail a thin board just thick enough so it will hold the foundation up to the center of the top bar for fastening. This is for grooved or smooth top bars.

This board should be placed on a support in a tilted position just right to wax the foundation with a wax tube after the foundation has been put in place.

There are other types of frames now being used that do not require waxing and some very satisfactory results have been obtained with them. They tend to give straighter and more perfect combs.

By following the directions here, a beekeeper of ordinary experience should be able to produce perfect combs of honey for cut comb packs.

## Death of R. T. Rhees

Reuben Thomas Rhees, 68, prominent beekeeper of the Rockies, died February 17 at his home in Pleasant View, Utah. Mr. Rhees was the first bee inspector in Weber county, from 1889-90. He helped to found the State Beekeepers Institute, and was secretary of the Utah State Beekeepers' Association for many years and later was vice president of the organization, in 1911.

His son, Reuben G. Rhees is the vice president of the Utah State Beekeepers' Association.

Glen Perrins,  
Utah.

—ABJ—

## Death of D. L. Lhommedieu

March 9th, Delbert E. Lhommedieu, Colo, Iowa, passed away. He was a life long beekeeper and still had 150 colonies at the time of his death. I was well acquainted with Mr. Lhommedieu, having known him for many years, and I regard him as one of the finest Christian men I have ever known.

W. C. McKinley,  
Iowa.

—ABJ—

## News from Oklahoma

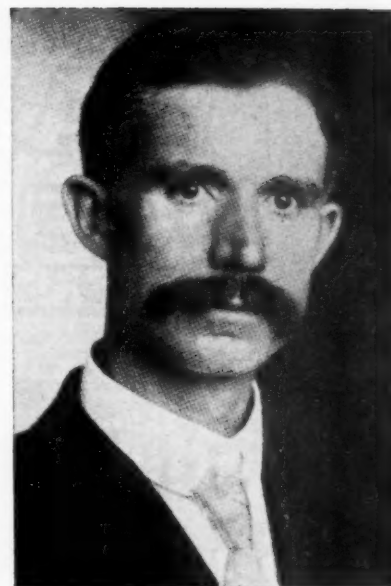
By Clarence J. Tontz.

We had the longest cold stretch in February that we have had for several years. On February 21, the first really fair day of the month, most colonies took a thorough cleansing flight.

Many colonies were killed during the cold snap by freezing and starving to death. In one apiary particularly in poor equipment and under bad management, approximately fifty per cent were lost. Some of the dead clusters of bees had honey yet, but because of the condition of the hive, they were unable to reach it. In another apiary recently examined, the loss was about forty per cent.

It is encouraging to note that in all well managed apiaries heard from, the bees came through one hundred per cent. The freeze was undoubtedly a blessing in that it eliminated the weak colonies that might later become a menace. I venture to say that before fair weather is definitely with us, there will be more loss of bees due to lack of stores.

We have had only a small snowfall and one shower in the past several weeks. Very little moisture in top soil. Bees began gathering first pollen of season from the maple February 23. After several weeks of confinement, the bees are thoroughly cleaning house and beginning to rear brood.



R. T. RHEES

—ABJ—

## Our Cover Picture

The poor pigs on the March cover were more unwelcome than a triple A overproduction. "Pigs is pigs," say the readers, "but keep them in the farm pen and off our covers. We're beekeepers." Perhaps if we had not made it pigs, but grazing cattle or sheep, it would not have been so bad.

Anyway, here we are this month, back among the flowers, royal maple's early bloom, whose pollen spoil so often stays back of the north wind where the bees can't get it. The beekeeper's smile always broadens with the first maple flowers, in anticipation of another splendid year. He is a proverbial optimist.

—ABJ—

## Indiana Losses

According to the Indiana State News Letter, for March, the losses in Indiana were heavy, varying from ten to more than fifty per cent, mostly from starvation, due to little opportunity to shift clusters.

It is safe to say that all colonies diseased last fall or with small clusters or lacking in stores are out of the picture at this date if wintered outside and stronger colonies will be weakened by loss of bees so they may not be in good shape for honey production without favorable spring weather and good management.

Dead colonies should be closed at once or carried inside a tight building safe from robbers and carefully examined for foulbrood. Tomorrow may be too late. Some of the larger beekeepers pick up all such colonies with a truck and remove them, the first warm sunshiny day, before bees have a chance to begin wholesale robbing. This may save untold losses.

# How to Install and Care for Package Bees

By J. E. Eckert,

Secretary California Bee Breeders' Association,  
California.

This is adapted with permission of the Secretary of the California Bee Breeders' Association, from a booklet issued to members to be used with shipments of bees and queens.

**T**HESE instructions are to aid those who have had little experience in the handling of bees. By following the simple directions, the queen and package will be given a better chance to show their worth.

## When and How to Order Bees

Orders for bees or queens should be placed sufficient in advance of delivery to enable the producer to make prompt delivery. The buyer should give explicit instructions to the shipper as to time and place of delivery. He should be notified by the shipper when the bees are to be forwarded. The buyer should ask the express agent to notify him at once on their arrival.

## When to Receive the Package

If the bees are to form new colonies, they should be received eight to

ten weeks before the major honey-flow. When they are used to strengthen weak colonies, they should be added four to six weeks before the start of the flow. This gives time for the colonies to build up a good field force and have a strong brood reserve for the flow.

If packages are to be placed on drawn combs with abundant pollen, bees may be received before natural pollen is available. When package bees are to be installed on foundation, the bees must be able to gather natural pollen since they cannot rear brood without pollen and no substitute can be used economically.

## Care of Bees on Arrival

Before the bees arrive, the hives should be ready and the locations

prepared. If combs are available, each hive should contain at least two combs of pollen, even though pollen is available in the fields and an equivalent of three full combs of honey.

When the bees arrive, take them from the express office as soon as possible. If an appreciable number are dead, have this noted on the invoice by the express agent and notify the shipper.

The bees should then be taken to a warm room, 60 to 70 degrees, and fed as much 50-50 sugar syrup as they will take by painting the syrup on the screens of the cages. After the bees are fed, they should be kept in a cool, dark place, 45 to 60 degrees, until late in the afternoon. **Bees drift less when installed just before dark.** However, if the day is cold and cloudy, the bees may be installed at any time with little or no drifting. Bees may be installed by any of the following methods:

## Installing the Bees

(1) Figure 1 shows clearly one of the best ways of installing package bees. The hive may contain drawn combs or frames of foundation. The sugar syrup is made by dissolving granulated sugar in an equal quantity of water. If the weather is cold, the syrup should be warm to help warm the hive.

The hive entrance is reduced to a half inch opening. The feeder can be

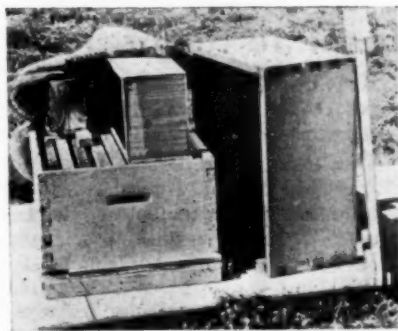


Fig. 1

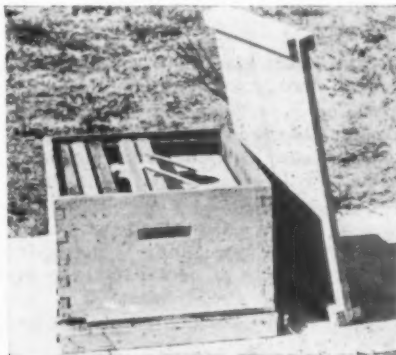


Fig. 2

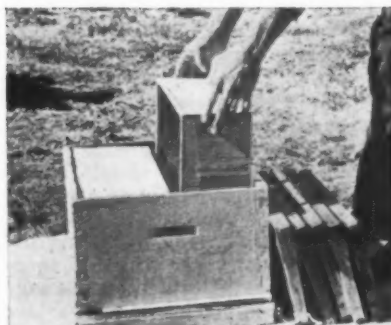


Fig. 3



Fig. 4

Figure 1, one method of installing package bees.

Figure 2, a second method as described in article.

Figure 3, adding package bees to strengthen a weak colony.

Figure 4, a variation in the method of adding bees to the colony. The article refers to these illustrations by number.



removed from the shipping cage, with a twisting motion, and placed on the frames near the hive feeder. The queen cage is suspended in the shipping cage usually by a metal tab or wire. Remove and examine this cage to see if she is uninjured. **Caution:** the candy hole in the end of this cage is closed with a cork or metal disc. This should be removed and a small hole punched through the candy, not quite large enough to release the queen. If the cage contains no candy, fill the hole with soft candy or softly granulated honey. [The white inside of ordinary soft chocolate coated candy is good.—Ed.]

Then place the queen cage near the feeder can, wire side down, over a space between two frames. Shake some bees over the queen cage and set the shipping cage, top side down, on two sticks on top of the frames. Cover the cage, frames, and feeder can with a piece of burlap and close the hive.

The next afternoon, open the hive quietly, turn back the burlap, remove the cage, fill the feeder with more syrup, and close the hive. The queen cage need not be removed until later. If all the bees have not gone out of the cage, they should be shaken out on top of the frames. **Do not disturb the colony thereafter for at least five days.**

(2) Proceed as in the first way but instead of placing the shipping cage in the hive, shake the bees from the cage into a hive body placed above the combs. The feeder and queen cage should be put in position before the bees are shaken from the cage. This method removes the necessity of disturbing the colony to remove the cage. It works well when the bees have been well fed and when they are installed on a cool day.

(3) The second figure illustrates the third method. The shipping cage is replaced with an open can of syrup, filled loosely with straw, the day after the bees are installed. The queen cage is removed at the same time.

#### **Adding Package Bees to Weak Colonies**

When package bees are used to strengthen weak colonies, they may be ordered without queens if the queens in the colonies are all right. If the colony is also to be requeened, then the queen should be killed a day before the package with the queen is installed. One of the safest ways of introducing such bees to a colony is to remove all combs the bees cannot cover on a cool day and fold one thickness of newspaper over the top and sides of the remaining combs. The paper should extend to the bottom board and the reduced entrance should be open only on the side of the established colony.

A few small holes should be punched through the top and sides of the paper. After feeding the package

bees all they will take, shake them into the hive and then replace the combs. (See third picture.) Or simply set the shipping cage, open side down, on two sticks placed on top of the unwrapped frames as in Figure 4.

The queen in the colony need not be caged when this is done. The bees will eat their way through the paper and join the cluster without fighting. A pail of syrup given at the time of introducing the package will be an aid in safe introduction.

#### **The First Examination**

Many beekeepers remove the empty packages and queen cages 24 hours after the bees are installed. The cluster should be disturbed as little as possible at this time.

The first examination of the combs may be made from seven to ten days after the package is installed. The presence of eggs or larvae regularly placed in the comb in the center of the cluster is sure evidence that the queen has been safely introduced and there is no need to examine other combs or to look for the queen. The hive should not be kept open longer than a few minutes and should not be opened during cold or windy weather.

Package bees should be fed until they can secure surplus nectar. Any friction top pail will serve as a feeder if the lid is punched with a number of holes made with a 6d nail. The hive should be leveled to prevent the syrup from running out. An open pan or pail may also be used if the container is filled loosely with straw to prevent bees from drowning.

#### **Directions for Introducing Queens**

Successful introduction of a queen depends on the queen acquiring the hive odor before she is released among the bees. Confinement of 48 to 72 hours is generally necessary. Queens will be accepted quicker by young bees than by old ones and introduction is safer during a honey-flow or when the colony is being fed during a dearth of nectar. Queens are partially introduced when they are shipped with package bees. When they are received separately or in individual mailing cages, proceed as follows:

First, be sure the colony is queenless and no queen cells are present. Then remove the cover from the wire screen and place the cage, wire side down, on top of or between the brood frames as illustrated in Figs 1 or 2. If the cage is placed between the frames, the candy end should be up. The bees will generally gnaw away the cardboard nailed over the hole and release the queen by eating out the candy. Sometimes they fail to do this and it is safer to look at the cage 24 hours after placing it in the hive and remove the cardboard, exposing the candy. Do not disturb the colony

for at least seven days after the queen has had time to be liberated.

Queens shipped through the mails generally look small but soon increase in size after they begin to lay. If a queen arrives injured or dead, return her to the shipper who will replace her at once.

—ABJ—

## **Package Experience**

In April, 1935, I received package bees from Alabama with all feeder cans empty. The cans had small holes punched in the cover. The bees arrived in cold weather and, over frozen ground, traveled nine miles in a lumber wagon and all seemed dead when brought into the house. A good warm room brought them from their sleep although they were spread three inches deep on the floor of their cage. The total loss was 5 per cent, a satisfactory shipment.

The second shipment of 3-pound packages came through in six days the first of May. In this shipment, the feeder cans were not empty but were still full of syrup. They had large feeder holes covered with cloth between the cover and the syrup. **The cloth had become sugar coated so the bees could not feed.**

The weather was mild and the bees came through with no loss at all and after a six-day trip did not seem to be hungry. So, do they or do they not require food in transit on a six-day journey? (Of course I am not in favor of the cloth feeder, if food is really required.)

Wm. Johnson,  
Saskatchewan.

—ABJ—

## **Institute Report**

Have you seen the new thirty-eight page Annual American Honey Institute report?

This year the report is unusually interesting. Not only does it contain a full financial statement of the Institute's affairs, results of Honey Cookery Contest and a classified Honor Roll, but it also gives a tabulated report of the advertising features. These features are estimated to have cost over half a million dollars and we, as beekeepers, received a return in advertising of \$73.00 for every \$1.00 expended. These features do not include the hundreds of writeups in the daily papers and magazines, also the hundreds of honey menus published in them.

If you are a supporter of the Institute, a copy of the report is already in your hands. If you are not a member, right now is a good time to send in your contribution of a dollar or more and receive a copy. Every reader of these columns who produces honey certainly wants to do his share in advertising honey.



# American Honey Institute NEWS NOTES

**H**ONEY AND SOME OF ITS USES is the new bulletin just released by the United States Department of Agriculture. It was prepared by Elizabeth Fuller Whiteman and Fanny Walker Yeatman of the Bureau of Home Economics. The leaflet gives some good practical information on honey and can be ordered from the Superintendent of Documents at Washington, D. C., for five cents per copy. The order number is 113.

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**M**ENU SUGGESTIONS AND NEW TESTED RECIPES make up the latest release (March 15) of American Honey Institute. If you haven't received a copy and would like to have one, just drop us a post card giving your name and address.

Often it is a problem to utilize leftover pineapple juice. Our new recipe leaflet contains a new recipe for Pineapple Nut Bread which our tasting committee voted for unanimously.

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Beekeepers who have honey on hand and who are planning spring selling campaigns will be interested to know that we now have available attractive new recipe request cards which tell the customer how a copy of "100 Honey Helpings" may be secured. The card pictures the cover of "100 Honey Helpings" and is printed in colors. To give each of your customers one of these cards is an inexpensive way to interest them in securing recipes and in using honey. They are available at the following prices:

	Members	Non-Members
100 -----	\$ .35	\$ .45
500 -----	1.50	1.80
1000 -----	2.75	3.10
5000 -----	11.50	13.00

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The world's **FIRST ALL-GLASS WINDOWLESS** building has been recently constructed by the Owens-Illinois Glass Company, one of our supporting members. The building is to be used as a research laboratory by the company. The '39 rooms have a total floor space of 20,000 square feet. The 80,000 glass blocks used in its construction are translucent, permitting soft diffused day-light to be transmitted throughout all the rooms. It is ventilated with a no-draft flow of conditioned air, cleaned by means of fibrous glass filters. Glass is also applied as insulation and sound deadener.

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Martha Lee Anderson, Director of the test kitchen for the Arm & Ham-

mer Baking Soda Company, has given exceptional names to the honey recipes included in her booklet, "Successful Baking." They are **HONEY DIAMONDS AND HONEY BOYS**. Honey Diamonds are so called because after baking, the cake is cut into diamond shapes. A gingerbread boy cutter was used to cut the cookie dough for the Honey Boys, hence the name. After trying the Honey Diamonds, no doubt you will want to write to the Church and Dwight Co., Inc., for a copy of their free booklet on uses for baking soda. The address is 70 Pine Street, New York City.

## Honey Diamonds

- 2 cups sifted pastry flour
- ½ teaspoon Arm & Hammer or Cow Brand Baking Soda
- ¼ teaspoon salt
- ½ teaspoon cinnamon
- ¼ cup butter or other shortening
- 1 cup sifted brown sugar firmly packed.
- 2 eggs, well beaten
- 1/3 cup honey
- ½ cup milk
- ½ cup nutmeats, ground

Sift flour once, measure, add baking soda, salt and cinnamon, and sift

—ABI—

## American Honey Producers' League BULLETIN BOARD

**M**ANY beekeepers confuse the American Honey Producers' League and the American Honey Institute, so I wish to point out that each is a separate organization with a separate purpose.

**The American Honey Producers' League** is the national beekeepers' association of America. Its chief function is to protect the interests and rights of beekeepers and to promote profitable conditions for the beekeeping industry. The beekeeping industry may go along for five or ten years at a more or less even tenor, but when an emergency arises which requires immediate, concentrated action, then is the time that a national organization swings into action and repays its members many times in service.

**The American Honey Institute** develops new uses for honey and conducts a national educational program to promote the use of honey in cookery.

It seems to me that any beekeeper who has an investment in bees and bee equipment can't afford not to

together three times. Work butter with spoon until creamy. Add sugar gradually, beating after each addition until light and fluffy. Combine eggs and honey. Beat until thick. Add to creamed mixture. Blend well. Add flour alternately with milk, a small amount at a time, beating after each addition until smooth. Turn into greased shallow pan (8"x12") and bake in moderate oven (375 degrees) 35 to 40 minutes. Frost with Butter Frosting. Spread thickly with ground nuts. Cut in diamond shaped pieces.

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The meat dealer in your community who sells Cudahy Products has on his counter each month, the **RECIPE OF THE MONTH** magazine, a copy of which he will be glad to give you. Quite often you will find a honey recipe included which is true of the March issue. **HONEY FEATHER CAKE** is the name and we are sure that it is all that the title implies.

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Inquiries from foreign countries have increased considerably these past few months. Just recently letters have been received from San Salvador in Central America, Hawaii, France, South India, and England. Judging from these inquiries and also from domestic requests, there seems to be a decided trend toward using honey in the manufacture of various beverages.

—American Honey Institute,  
Madison, Wisconsin.

make the welfare of **both** of these organizations his business!

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President Burleson has just written that Professor F. B. Paddock, Ames, Iowa, will take the place on the Beeswax Tariff Committee left vacant by the retirement of Mr. E. R. Root.

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Through the kind help of beekeeping leaders in Oregon, North Dakota, Mississippi, Nebraska, Florida, Canada, South Carolina, Alabama, California, Minnesota, Tennessee, North Carolina, Colorado, and Michigan, it has been possible to tell some beekeepers in each state how the League is functioning, with an invitation to join. Washington and Wisconsin are now being lined up for the same treatment.

My desk is cleared for action—so you can send that membership along any time now.

Arlene Weidenkopf, Sec'y-Treas.,  
P. O. Box 2020, University Station,  
Madison, Wisconsin.



## International Beekeeping Congress

Plans are already under way for the bee meeting to be held at San Antonio, Texas, next November 23, 24 and 25. Indications are that it will be one of the most important beekeeping conventions ever held in this country. The American Honey Producers' League, Southern States Beekeeping Federation, American Honey Institute, Apiary Inspectors of America and the Texas State Beekeepers' Association will all join together for three days to make it a great event.

A meeting was held in San Antonio on March 10 by a committee to make final plans for the convention. Those present were: T. W. Bursleson, president of the Honey Producers' League; F. L. Thomas, president of the Southern Conference; H. B. Parks, secretary of the Texas Beekeepers' Association; O. W. Parks of Iowa State College of Agriculture; E. R. Root of Gleanings in Bee Culture; E. G. LeStourgeon of Beekeepers' Item; and Frank C. Pellett of the American Bee Journal.

In view of the large number of letters received from beemen who expect to be present at the convention, the meeting was an enthusiastic one. The Crockett Hotel was chosen as official headquarters for the convention and all meetings will be held there.

Details of the program, of course, were left to the secretaries of the organizations participating, but it was recommended that new talent be secured for speakers instead of using men who have appeared at previous conventions. It was also suggested that part of every day be given over to sight-seeing with shorter sessions devoted to speaking.

It was also proposed, in case enough beekeepers are interested, that a trip to Mexico be arranged immediately following the close of the convention. An all-expense trip including the cost of transportation, hotel, passports, guides, etc., is offered for about \$35 from San Antonio to Monterey, Mexico, and return if as many as thirty-five will go.

Dr. Park and our field editor had already made the trip and assured the members of the committee that it was a never to be forgotten experience which offered an unusual opportunity.

As proposed, the trip will include an auto trip through the orange groves of the Rio Grande Valley, a visit to the old seaport of Port Isabel on the Gulf of Mexico and three days in Mexico, including both Matamoras and Monterey.

All told, it will be a different kind of convention and one which is expected to attract the largest attendance in many years. There will be fewer speeches, more discussion and more time for visiting and far more to see. We expect to announce more details from time to time as plans are completed. In the meantime it will be well for those who think they will go on the trip to Mexico to write E. G. LeStourgeon, Box 838, San Antonio, since that trip must be arranged some time in advance.

—ABJ—

## Are You a Member?

Elsewhere in this issue is a short news item in regard to the Annual Report of the American Honey Institute. Few beekeepers realize that the Institute is a year 'round influence in the honey markets. Years ago we sold the bulk of our honey during September, October and November. Now, honey is in demand practically the year around due to the work of the Institute in interesting bakers in using honey in their breads and pastries.

No business worthy of the name can exist without advertising. Honey production is surely a worthwhile busi-

ness and everyone interested in it should take part in the movement to make honey an article for daily use on the consumer's table.

The amount required of each one of us is very reasonable and it is necessary that we all support the Institute if it is to continue in its very important work.

—ABJ—

## Rain

When the spring rains come they are the source of discomfort or delight, depending upon one's situation. Rain in the city is just rain, it is the means of discomfort, gloom and grouch; it is the origin of slops and muddy rugs and accompanies the clouds that shut out the sunshine.

In the country, rain brings mud and perhaps wet feet and gloomy atmosphere, but it indicates prosperity. It hastens the greening of the grass, the opening of the flowers and the leafing of the trees. With rain everything comes which makes for abundance and comfort.

"More rain more grass," was a favorite saying of the writer's father when someone complained about the weather. After the long series of extremely dry seasons through which we of the Mid-West have passed it is a welcome change to have the ground full of moisture again, to see the streams with normal flow and to feel that the crops we plant will have a chance to mature unhampered by drought.

To those of us who live close to the soil, the sound of rain upon the roof is a pleasant sound, it comes as music to our ears. In seasons of excessive rainfall there is always an abundance of something, there is feed for the cattle and vegetables in the garden. In seasons of drought there is little of anything; the pastures are bare, the crops are sparse and we suffer from apprehension through long-looking in vain for the rains which do not come.

Rain anticipates the resurrection of the flowers and the grass which have lain dormant throughout the long winter and, instead of indicating gloom and discomfort, is the forerunner of "life, beauty and joy."

—ABJ—

## Good Combs

Next to the movable frame which made beekeeping a practical pursuit, the invention of comb foundation was the most important single contribution to the industry.

Nothing which the beekeeper can do will increase the productive capacity of his hives so much as to see that every comb is well built and composed of worker cells. Comb foundation makes it easy to get good combs but there is a time when it can be done to advantage and other times when conditions are unfavorable.

To insure good combs, foundation should be given to the bees during a honeyflow and the combs should be drawn above the brood nest. This insures that they will be drawn to the bottom bar and fastened on all four sides. Such a comb will have a much larger brood area than one drawn in the brood nest, which does not come to the bottom and which is left rounded at the corners.

Too many beekeepers fail to realize what poor combs cost them every year. Every excess drone reared will consume the time of the nurse bees in his care and eat the honey which workers bring in without adding anything to the store. The same space given to the rearing of worker bees would have made a direct contribution to the amount of honey brought in.

Care should be used to see that poor combs are never used in the brood nest and it is better to eliminate them entirely as fast as possible and draw new ones on full

sheets of foundation. Much of the beekeeper's working capital is represented in the combs in which the brood is reared and the honey stored. The better the combs, the more profit will accrue to the owner.

Beekeeping is a business of details and the successful beekeeper is one who gives attention to every such item. One hundred colonies with perfect combs and ample equipment will return more net profit than double the number with ordinary care.

—ABJ—

## Breeding for Desired Characters

During recent years great interest has developed in breeding for improvement, especially with plants. Results in some cases have been so outstanding as to lead to hope for the solution of many problems by this means. Entomologists have even turned to plant breeding as a possible means of dealing with insect pests. In cases where it has proved too difficult to get satisfactory control by the use of poison, it is hoped to develop plants which are resistant to insect injury.

In the case of plant breeding for disease resistance, research workers report that it usually requires fifteen to twenty generations to produce a resistant variety and fix the character. They have definitely established the fact that immunity or resistance to disease is hereditary and can be bred in a strain of plants. To secure fifteen or twenty generations of plants by the usual means in a northern location, however, requires about that many years of time. In order to hasten results, some workers are growing the special strains under glass during that portion of the year when it is too cold for growth in the open field, or sending the seed south for propagation in Mexico. By working north with the season it has been found that three generations of peas can be grown in one year.

The Market Growers Journal tells of harvesting the first crop in Mexico in March, the second in California in June and the third in Colorado in late summer in time for the seed to be planted again in Mexico in November. The object of course, is to hasten the time when resistant seed can be available to the harassed grower whose crop is suffering from disease.

Now that we know definitely that an occasional colony of bees is resistant to American foulbrood research workers will use all possible means to fix the character and hasten the propagation of such a strain. If fifteen generations are required to accomplish the result as in the case of plants, it will be some time yet before stock is ready for distribution.

—ABJ—

## Freight

A California magazine devoted to the citrus industry recently made the statement that last year's crop of citrus fruit in that state amounted to \$97,500,000. It stated also that freight and refrigeration cost the growers \$47,000,000.

It thus appears that the cost of transportation alone consumed very nearly half the crop. From the other half the grower must pay all expenses of growing and harvesting, the interest on his investment and live from what is left.

Freight rates show a constant tendency to advance and this tendency is the most serious obstacle to agricultural prosperity. As long as freight charges take half the gross returns from any crop, there is little chance of a satisfactory solution of the farm problem.

The thing most needed by every food producer is a simplified system of distribution which will enable the product to reach the consumer at less cost and leave more of the purchase price for the grower.

Higher prices help some, but as prices go up, the cost of distribution increases accordingly until the producer gets far less benefit than he is entitled to. When prices are low distribution costs are likely to take it all. An incident in the writer's family is extreme but it shows what can happen. A carload of potatoes was shipped to a commission merchant in Chicago. When the sale was made the returns were insufficient to cover freight and com-

mission and, instead of a check for the potatoes, there came a bill for the balance of the freight.

Trucks have helped to keep down excessive charges, but now the trucks are brought under government regulation and can no longer set their own low prices without regard to competition. This probably spells the beginning of the end of low freight charges. High freight rates are stifling farm prosperity.

—ABJ—

## Top Entrances

Reports coming to us indicate that where the bees were wintered outside, much less loss has occurred where the top entrance was used. Apparently there has been less condensation of moisture which resulted in the formation of ice inside the hive. Beekeepers using top entrances with some colonies in the same yard with others using bottom entrances, report much heavier losses with the bottom entrance. We would welcome more detailed reports of experience with top entrances during the past unusually severe winter.

—ABJ—

## The Prospect Ahead

Beekeepers are feeling more optimistic than for several years. In spite of the unusual winter and heavy losses of bees in some localities, beekeepers generally radiate an atmosphere of confidence.

The supply of honey is lower than for many years and the demand is strong. Few beemen are holding honey still unsold and those who have it are in position to realize cash at any time. The indications are that buyers will be waiting for the new crop at prices which will leave a profit for the producer.

The heavy snowfall over so much of the country has saturated the soil with moisture to an extent beyond that for many years past. Plant life is vigorous and the prospects of a honey crop, in so far as can be anticipated at this season, are unusually good.

There is every indication of a record breaking demand for package bees and the man who gets his order in late is likely to be disappointed. Likewise there are indications of a heavy demand for supplies which may result in some delay in filling orders during the honeyflow. It is always wise to order needed goods in advance, although the supply firms use every possible effort to fill orders promptly.

Beekeepers generally are greatly encouraged and feel that a measure of prosperity is now in sight. We trust that their anticipations will be realized.

—ABJ—

## Supers

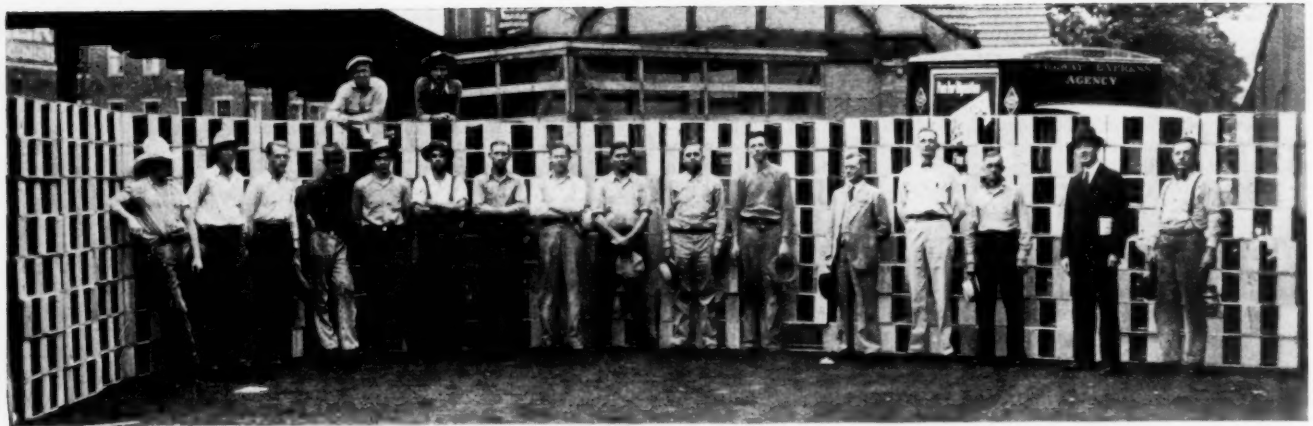
It is high time for every beekeeper to make sure that he has a plentiful supply of supers for the coming crop. One of the most common causes of failure to harvest a full crop of honey is the lack of sufficient storage room.

Unless there is ample storage space within the hives the bees are sure to lose much of the crop. Dr. Miller emphasized the importance of having on hand enough supers for each hive to equal the largest crop known to the locality. In his later years he advised seven comb honey supers for each hive. In the average location it is hardly safe to depend upon less than four supers per hive, whether one produces comb or extracted honey.

When the raw nectar is coming in rapidly, much space is needed in which to store and ripen it. During a good flow the bees will often fill a super with nectar within a few hours and three or four supers may be needed at one time to hold the incoming crop. Those who have made sorghum molasses realize that it requires more pans in which to boil down the syrup than are needed for the finished product. It is the same with the bees, they must have plenty of room in which to evaporate the nectar if they are to save all the crop.

The number of supers needed will be determined by the nature of the honeyflow rather than by the size of the crop. If the flow is long and slow not so many will be needed. If the flows are short and rapid more supers are necessary.





Railway express employees and beekeepers standing before an exceptionally large shipment of live bees going to North Dakota.

## A Bridge Between the North and South

By V. M. Grimsley, Tennessee,  
and G. Sadler, Georgia.

**T**HE transportation around which American industry has been built, serves as the connecting link between points of production and consumption. Business today is geared up to a national distribution through its transportation facilities.

Express transportation has been the bridge between the southern bee shipper and the northern honey producer, ever since that day in the early 80's when A. I. Root successfully shipped the first half-pound package of live bees. Through persistent efforts came a new business distinctly American in makeup which has grown from a local supply and demand for honey to a position of national rank with an annual business of approximately \$50,000,000 from which some 800,000 persons derive either all or part of their income.

The early war demands in 1914 for sugar substitutes gave the first real urge to increase honey production and marks the beginning of two distinct divisions of the business—the southern live bee shipper and the northern honey producer.

Live bee shippers were first presented with the problem of a suitable

shipping container. After all the years of experiment for something better, Mr. Root's old original can idea has been changed but little. Packages and shipping methods were given first national experiment in 1915 and 1916. A varied type and size of cage was used according to the individual idea of what was best. In 1928 there were eighty different kinds, sizes, types, and shapes of cages. A study by the Southern States Bee Culture Field Laboratory resulted in the issuance in 1932 of "Recommendations for Shipping Cages for Bees." Now in 1935 there are only two general types and sizes.

In the February, 1935, issue of "The American Bee Journal" Dr. Warren Whitcomb, Jr., made further suggestions as to the number of cages to a crate or strap, that is best suitable for transportation and handling. These recommendations were generally adopted by shippers in 1935, with extremely satisfactory results.

By 1928, with improved methods, this business in bees graduated from the infancy class into the industrial. Continual promotional work by the shippers and the economic soundness

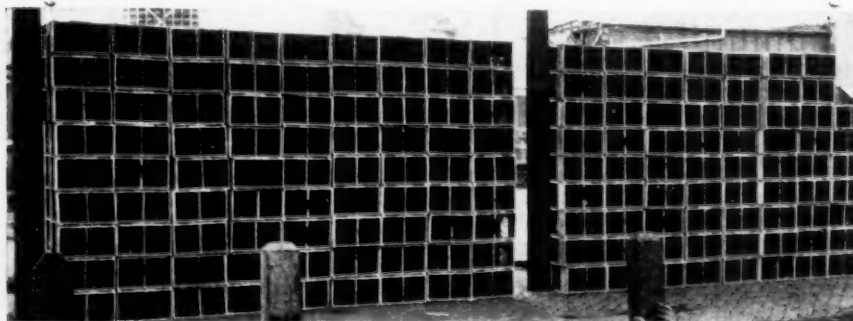
of package bees for northern production continued to show results.

The formation of associations, studying of marketing conditions, state and national group meetings for the exchange of ideas and the birth of the American Honey Institute caused further progress until, in 1931-1932, an increased annual production of 20,000 packages or more was shown.

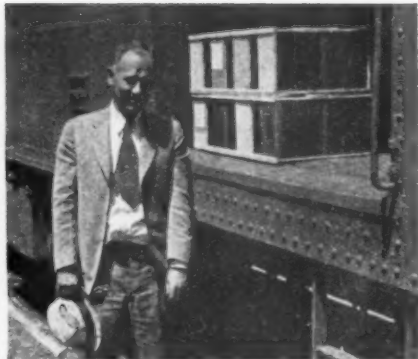
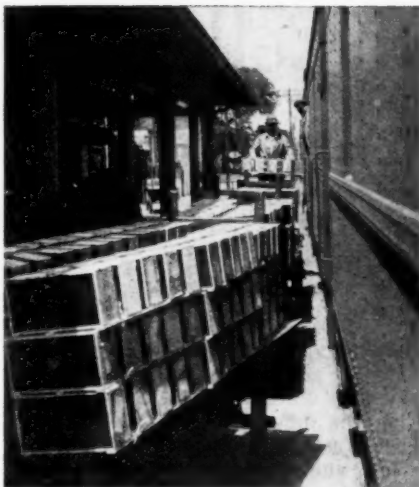
A reduction in express rates in 1932 gave package bees a further upward trend. The northern producer who had been ordering 10 to 15 packages doubled his bookings. Consolidated orders from associations made new high levels in 1933 with an increase from about 175,000 packages to 200,000 packages.

Price cutting in 1933 almost shook the foundation of the entire package bee business. Regulation and standard prices took the tremble out and pegged another high mark of approximately 265,000 packages in 1934.

1935 commenced with a whirl. Some shippers were booked to capacity as early as January. Increased orders, ranging from 75 to 400 per cent, were handled by many shippers.



There were 2,620 pounds of bees in this shipment, claimed to be the largest single shipment of bees ever moved by express.



Above, commercial agent V. M. Grimsley bids them farewell.

At left, sixty-six crates at Marysville, California, ready to move on to Spokane, Washington.

This shipping season recorded the largest single shipment of bees to move on one date to one consignee by one shipper, consisting of 400 packages. Early reports this year, 1936, indicate the prospects fine and the business in a very stable position.

So, the honeybee, that symbol of industry, has taken a place in the commerce of the United States and Canada. It is sold for fruit pollination, for the production of immense quantities of honey as well as for the wax obtained as a by-product.

During the spring beginning about March 15th and on into June, there is a heavy movement of live bees by express. **Northern beekeepers replace winter losses or make increases** and the Railway Express Agency is giving intensive study to this business, realizing that to afford satisfaction to shippers and receivers, bees must be transported quickly and arrive at their destinations with minimum mortality.

In 1934 and 1935 Dr. Warren Whitcomb made several trips, visiting the beekeepers and accompanying commercial shipments, to observe the method of preparation and the handling of the bees. This was done with the cooperation of shippers and the Railway Express Agency, and has been of great benefit.

Before these studies were begun, there were conflicting theories about the cause of the heavy death rate ap-

parent at times. It has been learned that bees in transit need plenty of air and should be kept cool. There is danger of bees getting too little air but little danger of their getting too much air except when it is very cold. When bees are confined in cages, they generate considerable heat; during periods of high temperature they become nervous and excited. The more excited they become, the higher the temperature in the cage rises.

Thus, a vicious circle is produced and if the bees are not quieted they may die quickly. When they begin to run around the cage rapidly and make a roaring noise, it is a danger signal and effort should at once be made to quiet them by removal to a cooler spot affording more air, and by the use of a spray of clean, cool water between the cages. It is apparent, therefore, that during hot weather the shipping hazards are greater than when it is cool or cold.

During periods of low temperature, the bees form a quiet, compact ball around the queen and feeder can and precaution should then be taken to handle the crates so carefully that this cluster will not be broken down. They should be kept out of cold drafts that may chill them and cause the bees to fall from the cluster. When they fall to the bottoms of the cages, due to chilling, they may starve to death before they become

warm enough to regain their activity and climb again to the feeder can.

Bees which die from over-heating form a wet, soggy, greasy-looking mass in the bottom of the cage, while those which die from starvation appear to be dry and do not stick together. The life of the bee is relatively short at best. Some, in each shipment, having completed the life span, will pass out. This is to be expected; a few scattered on the bottoms of the cages need not give concern.

It has been the policy of the Railway Express Agency to issue bulletins to its employees giving instructions on the care of this important traffic. A revised publication bringing knowledge of this subject up to date is available for those whose duty it is to care for shipments of live bees.

Some important "Don'ts" for transporting bees are—Don't expose to sun, rain or snow. Don't place cages near hot stoves or steam pipes. Don't turn cages up-side down. Don't jar cages; avoid breaking clusters. Don't cover up with other packages. Don't fail to afford the best ventilation possible in cars, on trucks and in offices.

[The first part of this material was furnished by V. M. Grimsley and the latter part by Mr. Sadler, both in the employ of the Railway Express Company. Apparently this great organization is doing everything possible to help our industry with one of its most important problems. The recommendations given in this article have been published in the "Express Messenger," official organ of Railway Express employees, in addition to the bulletin mentioned on "Recommendations for the Care of Bees in Transit." The pictures used were also furnished through the courtesy of Stanley Todd, editor of publications of the Railway Express Agency.—Ed.]

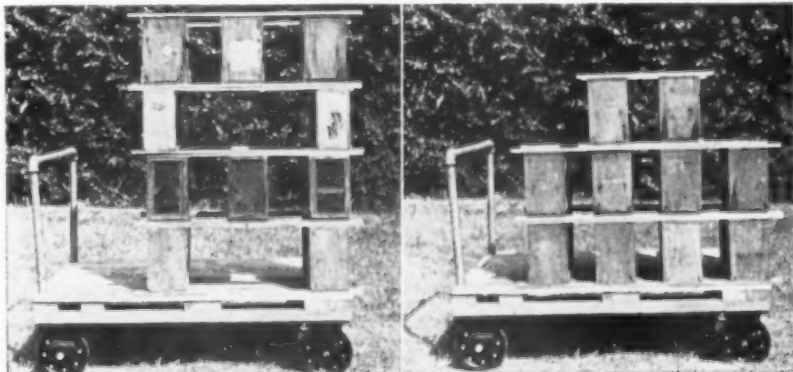
—ABJ—

## Michigan Losses

Reports indicate heavy winter losses in parts of southern Michigan. It is too early to know exact conditions as bees are not yet flying in northern Michigan.

R. H. Kelty,  
Michigan.

The crating at the left is according to the recommendations of the Baton Rouge Field Station. It allows ample ventilation. The crating at the right also shows 10 cages. However they are crated in 4-cage crates, leaving two packages crated alone. As shown, ventilation is not cut off, but under actual shipping conditions the top crate may be jarred out of place and cut off the ventilation.



# Influence of Size of Brood Cell Upon the Size of the Worker Bee\*

By Roy A. Grout,\*\*  
Illinois.

THE late Monsieur Ursmar Baudoux of Belgium was the first to conceive of the use of an artificial foundation having an enlarged cell base to increase the size of the emerging bee. In the year 1893 he was amazed on discovering bees from an old skep which were very much smaller than normal. He then conceived the idea of raising bees in larger cells. He accomplished this by means of stretching regular foundation to the size he desired and had by 1896 sufficiently proved his point in Belgium that a manufacturing company began to place upon the market artificial bee comb foundation having enlarged cell bases. It was Baudoux's belief that the nurse bees following a natural instinct filled the bottom of the enlarged cell more copiously with larval food and that this caused an increase in the size of the worker bees. He also intimated that the larger bee would generate more body heat which would result in a greater quantity of brood.

\*Rewritten from Journal Paper of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 129.

\*\*Formerly, Research Assistant in Apiculture, Iowa Agricultural Experiment Station, Ames, Iowa.

By means of stretching foundation, he experimented with various sizes of foundation having 750 cells to the square decimeter, 740, 730, 710, 700 and even 675 cells per square decimeter. (This is in contrast to the U. S. standard size which is 857 cells per square decimeter.) By means of an ingenious glossometer of his own make, he determined the tongue reach of his colonies and by means of an equally ingenious thoraxometer of his own make, the diameter of the thorax. He found that with an increase of 50 cells per square decimeter in the size of the foundation, there was a corresponding decrease of one half millimeter in the tongue reach. His thoraxometer gave thorax diameters of 3.7 mm., 3.9 mm., 4.1 mm. and 4.3 mm. for worker bees reared in brood cells built from foundation having respectively 850, 800, 750, and 700 cells per square decimeter. He arrived at the conclusion that artificial foundation having 700 cells per square decimeter gave a bee which was superior in all its measurements to those reared in combs constructed from the smaller sizes of artificial foundation.

Independent of the work done by

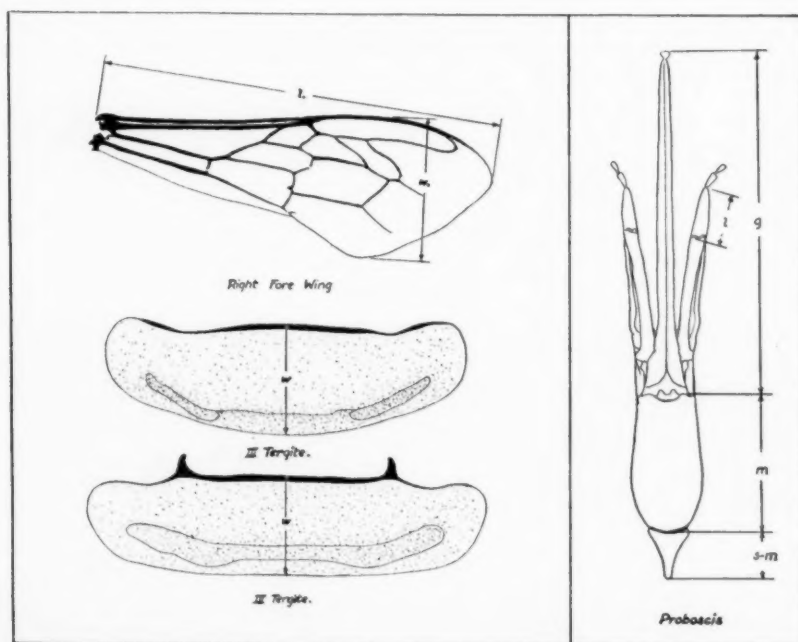
Baudoux, a Frenchman by name of Pincot arrived at the idea from a slightly different angle. Pincot noticing the difference in size of worker bees from a swarm placed on foundation and the worker bees of the parent stock reared in natural combs, came to the conclusion that this was due to the fact that the natural brood cells were larger than those drawn from the foundation and actual measurements confirmed his theory. He then started experimenting with foundation having 736 cells per square decimeter and reports that during a two year period thirty colonies using this size of foundation gathered approximately one-third more honey than did thirty colonies on normal foundation. Unfortunately, in 1910 his apiaries were destroyed by a flood and Pincot was forced to abandon his experiments.

While the experiments of these two cannot be considered of a very scientific nature, each claimed larger bees resulting in a greater yield of honey. Their activities, particularly those of Baudoux, were convincing to the extent that a firm in Belgium has offered enlarged cell foundation for sale since 1896. Other manufacturers have followed in this course. France was next and more recently Italy and England have manufacturing concerns offering for sale enlarged cell foundation and claiming better results through its use. Consequently, interest in this country has been focused upon this matter.

A Russian worker by name of Lovchinovskaya reporting on experiments started in 1925 using enlarged cell foundation showed that bees reared from enlarged cells weighed more, had a greater load capacity and that from the results of one season produced more honey.

During the period 1930 to 1932, the first scientific study was made to determine the effect of rearing in enlarged brood cells upon various parts of the worker bee. These experiments were carried on at Iowa State College under the direction of Dr. O. W. Park.

Three different sizes of foundation were used having respectively 857, 763 and 706 cells per square decimeter. The foundation having 857 cells per square decimeter is the commercial size manufactured in the



w.—width of part. l.—length of right fore wing. g.—length of glossa. m.—length of mentum. s-m.—length of submentum. g.+m.+s-m.—length of proboscis.



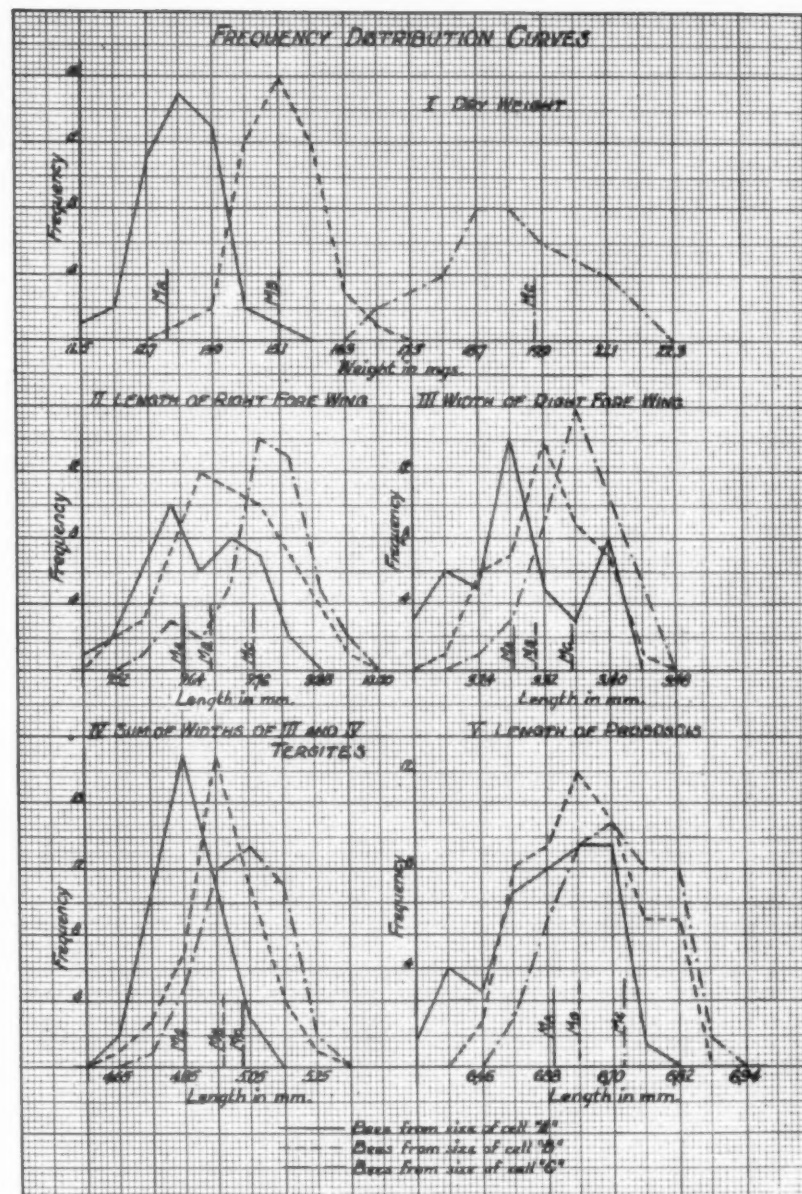
United States. The foundation having 763 cells per square decimeter closely approximates that having 750 cells per square decimeter which has been manufactured since 1896, by Jos. Mees Sons of Herenthals, Belgium, and the latter size closely approximates that having 700 cells per square decimeter which the same firm has manufactured since 1927. Care was taken to eliminate all warp and sag in the finished comb and no control of size of brood cell other than size of foundation was used.

To facilitate recognition and handling of the combs, and for convenience in presenting date, the frames containing the standard size foundation, that having 857 cells per square decimeter, were marked "A" and the cell size was referred to as size of cell "A". Similarly, frames containing foundation having 763 cells per square decimeter were marked "B" and the cell size was referred to as size of cell "B". Likewise, the frames containing foundation having 706 cells per square decimeter were marked "C", and the size of cell was referred to as size of cell "C".

In general, two frames of each size of foundation were placed in the same colony. Individual colony records were kept and the queens were marked by clipping the right wing of those reared in an even numbered year and the left wing when reared in an odd numbered year.

It is of interest to mention that difficulties were experienced in getting the queens to oviposit worker eggs in the enlarged cells when all three sizes were placed in the same hive at the same time. This was particularly true in case of size of cell "C". While the worker bees apparently recognized no difference in accepting the three sizes of cells, the queen bees showed a preference for the smaller cells for ovipositing. This result was confirmed by similar experiments carried out by Lovchinovskaya.

An effort was made to collect the bees upon emergence from all three sizes of cells in a single colony at approximately the same time and under the same conditions. To determine the date of emergence, a chart was used whereby the daily emergence of bees from twenty-three colonies was recorded. Prior to



emergence, each frame was caged in a Root introducing cage and a selected area of brood containing no nectar or honey was caged with an additional screen cage.

Each sample of bees contained at least fifty specimens. Following the method outlined by Alpatov of Russia the bees were slightly anaesthetized and then killed by dropping into boiling water. They were then pre-

served in a 70 per cent alcohol solution to await further treatment. The measurements taken on each individual bee were dry weight, length of right fore wing, width of right fore wing, the sum of the widths of the third and fourth tergites and the length of proboscis.

In Plate I are shown the measurements taken on the right fore wing, the third tergite and the fourth ter-

TABLE I  
Influence of Size of Brood Cell upon Size of Bee (Colony 25)

Measurement Taken	Size of Cell A	Per cent Increase from "A" to "B"	Size of Cell B	Per cent Increase from "B" to "C"	Size of Cell C	Per cent Increase from "A" to "C"
Dry weight in mgs.	13.1000	15.50 %	15.1302	30.98 %	19.8178	51.27 %
Length of right fore wing in mm.	9.6075	0.60 %	9.6653	0.89 %	9.7509	1.49 %
Width of right fore wing in mm.	3.2836	1.05 %	3.3181	1.15 %	3.3562	2.21 %
Sum of widths of third and fourth tergites	4.8545	2.24 %	4.9632	1.45 %	5.0353	3.72 %
Length of proboscis in mm.	6.5916	0.93 %	6.6530	1.13 %	6.7280	2.07 %

gite. (In explanation the two latter parts are the two largest plates on the top of the abdomen.) Plate II shows the measurements taken on the tongue or proboscis. In the series of graphs which are illustrated, each character, namely, dry weight, length of proboscis, length of right fore wing, width of right fore wing, left fore wing and the sum of the widths of the third and fourth tergites is plotted for each size of cell. In all cases there is a distinct trend towards a larger character of the worker bee as the size of the brood cell increases.

In table I are given the averages of the five measurements for the bees from each size of cell and the per cent increase of these measurements. It is of interest to note that the length of proboscis increased 2.07 per cent as the size of foundation was increased from 857 cells per square decimeter to 706 cells per square decimeter.

We, therefore, find that the size of the brood cell is definitely a factor in determining the size of the adult worker bee. It is also apparent that larger bees are obtained through the use of artificial bee comb foundation having enlarged cell bases. It is reasonable to state when we compare a 2.07 per cent increase in the length of the tongue, that size of brood cell alone is not sufficient to produce a much larger bee. It is much more reasonable to state that selection and breeding of bees plus the application of such factors as size of brood cell should accomplish marked results in producing larger bees.

From the results we have obtained we cannot agree with Baudoux either in the results he obtained or the consistency of his results. While he records increases of 11.9 per cent to 25 per cent in length of proboscis as the size of the brood cell increases from 850 cells per square decimeter to 700 cells per square decimeter we are only able to find an increase of 2.07 per cent as a maximum. However, we believe that our results compare favorably with results obtained by Michailov of Russia who, on measuring the tongues of worker bees reared in worker cells as compared with those of worker bees reared in drone cells, found an increase of 4.82 per cent. While this is a greater increase than ours, it must be considered that the size of cell was increased slightly more than twice as much as in this experiment which in all probability would account for the difference. Our results also compare favorably with those obtained by the same worker on worker bees reared in new combs as compared with worker bees reared in old combs. Here Michailov records an increase of 1.05 per cent in the length of the tongue.

Since we have made the statement that size of brood cell alone is not

sufficient to produce a much larger worker bee, we must consider the fact that the crucial test for the commercial use of enlarged foundation is greater honey production. While this experiment should be a strong indication toward that end, the exact relation of this increase in the size of adult worker bees to a greater yield of honey has yet to be proved. During the past four years, we have been conducting an experiment in a commercial yard with from fifteen to

twenty colonies containing brood combs constructed from each size of foundation, making an apiary of sixty colonies maximum. To date we have not been able to find any significant increase in the honey production due to the use of enlarged cell foundation. This experiment is still being continued in a location more favorable for honeyflows and we expect to have some definite results in the near future.

—ABJ—

## Are We Ready for a New Bee?

By P. C. Chadwick,  
California.

THE article by Dr. Lloyd R. Watson in your February issue seems to me to have left an opening for some discussion as to the advisability of enlarging the type of our present honeybee by select breeding.

His reference to the breeding of the primitive horse from inferior types to our present forms is a matter of selection consistent with nature and is sound from that standpoint. However that there are limitations to the distance nature will permit some forms of life already apparently complete for the purpose created, must be recognized. To my mind the honeybee is in that class.

Dr. Watson speaks of "the little wild honeybee," the inference being that there is a larger tame honeybee. Personally I do not regard the present honeybee as we find it today, as a wild bee.

Take a colony from the most remote part of an infrequented woods, bring it to your apiary, house it as other colonies are housed or let it remain in a section of its original tree home and you will find it to be no more wild than the colonies long in your possession.

We beekeepers are in the habit of going off on an impossible tangent once in a while so far as nature is concerned. For years our bee journals have been printing reams of articles on the question of a non-swarmling strain of bees. It has always seemed to me there was a lot of time wasted advocating such an improbable accomplishment, because nature would hardly yield to an arrangement that in itself might destroy the species. If accomplished it would be tantamount to breeding the mating instinct out of domestic animals. If it were possible to keep a single colony from swarming for a period of 99 years, they would more than likely swarm on the hundredth year if conditions were met that made it desirable from nature's standpoint.

Dr. Watson says, "but the genetical potentialities of *Apis mellifica* now,

after 3,000 years of continuous history, are as a closed book." With this I heartily agree, but maintain the thought that another 3,000 years may pass and find little difference in *Apis mellifica* at the end of that period, because the honeybee would seem to be in perfect balance with the requirements of its natural mission, as it is.

Even if man should seek to change it, nature would likely intervene in such a way as to preserve the necessary balance. For there is some reason to believe that in the plan of nature the honeybee was not only created to conform to the necessity of its mission as a pollenizing agent, but that the plants and their bloom may have been fashioned to conform to the convenience of the bee. At any rate there is a barrier that seems to have been deliberately placed by nature to prevent any wide deviation of the bee in size and action from what nature designed that it should be, this being accomplished by limiting the size of the bee to that of the cell in which it is developed, beyond which it cannot go. A wise move on the part of nature, designed to prevent this all important pollenizing agent from developing beyond a size necessary for the adequate service for which it is intended.

Dr. Watson further says: "She is perfect, indeed, from the viewpoint of nature." If such is the case (and I believe Dr. Watson has exactly expressed the matter), I doubt if by any process man will be able to tear down such a perfect accomplishment. If it were possible to increase the size of the honeybee to that of the humblebee, would it be a benefit or a detriment to nature?

I have never believed artificial inseminating of queen bees to be practical, because I do not believe it can ever be perfect. It is well known that the entire contents of the male organ is required adequately to supply the queen with a sufficient amount of the male element to fertilize, not a few

eggs, but literally hundreds of thousands of them. Man may never hope to duplicate this feat.

The mere fact that the honeybee is not able to reach the nectar of red clover should not be taken as a fault when nature has already provided a means through which it is accomplished. Then too, I do not feel that we are in so much need of a draft horse type of bee as we are of a more energetic one of the present type.

At the same time there is little doubt in my mind but that we are enjoying a type of bee established through the process of elimination, for during the past thousands of years there has been, doubtless many times, in seasons of dearth, when only those of the greatest energy were able to emerge with sufficient stores to maintain the colony.

The fact that our present bee cannot work long in a temperature much below fifty degrees, conforms to the fact that vegetation is more or less inactive at a lower temperature, and the services of the bee are not so much in demand.

Dr. Watson further says: "The little wild jungle fowl had to be rebuilt to meet the exacting needs of man." Further: "Her natural output of twenty small eggs a year truly was a beginning but only a beginning toward the 300 large eggs she now produces." But nature did not require more of her, in fact her limit was the number she could adequately cover for incubation, yet she was capable of laying many more on nature's needs.

Some years ago an oologist opened the nesting cavity of a yellow shafted flicker (commonly known as yellow hammer) to secure the eggs for his collection, but upon inspection found the set incomplete. He removed all of the eggs but one and carefully replaced the portion of wood to close the cavity he had opened. For a period of seventy days he removed one egg each day, always leaving one. Thus may be seen the effort of the bird to attain a full complement in requirement of nature's demand, that was being thwarted daily by the collector. So it seems the little wild jungle fowl might have increased her complement in a like manner because of her inability to acquire the necessary number required by nature for her service if she was being deprived of it daily by man.

Breeding for a larger egg size is easily within reason, for by so doing nature's plan would not be molested, because no particular necessity was being forestalled.

Increasing the size of our present honeybee, to me, seems to be an iridescent dream, that even if consummated would be of questionable value both from a commercial as well as nature's standpoint.

## A Change in the 1937 National Honey Week

THERE will be no National Honey Week in 1936. Your Institute is going to experiment with this sales promotion plan and at the same time **gamble** a little on beekeepers' co-operation. Perhaps after reading the following explanation, it may not appear too speculative, however, if you think it too dangerous you have until May first "to speak your tongue."

A proper distribution of honey should help to stabilize prices. National Honey Week was sponsored by the Institute to help develop a proper distribution. While this week is a concentrated effort of but seven days' duration, reports show that it creates not only an immediate demand for honey but stimulates consumer and retailer interest in honey for many weeks that follow. At the same time it secures far more cooperation from allied interests than could possibly be obtained otherwise.

Consumer requests to the Institute definitely indicate that more honey is purchased in the fall and winter months. Why? Probably because beekeepers and packers and retailers everywhere **make a greater effort to sell honey** at that time. More markets are flooded at that season; naturally more price cutting is in effect. Producers and packers alike have experienced the disastrous results of flooded markets.

From the very beginning the Institute has attempted to **take honey out of the seasonal class** of foods and create an all the year demand for it. It is encouraging to note since the Institute's origin that more honey recipes for summer menus are being included in women's magazines, newspapers, and on the air. More honey is now being used in the summer months than was eight years ago. One large market manager reports that he has been selling honey for thirty years and the most noticeable trend he observed was the call for honey during the summer months. He stated that ten years ago he stocked honey only during the fall and winter months. The past two years he has carried honey the entire twelve months and made good sales in spring and summer.

Your Institute's program would be more effective if more grocers stocked honey as a twelve-months' staple. Perhaps if producers and packers stopped flooding markets in the fall and winter, reserved stocks for the spring and summer period, maintained a steady price that was reasonable to the consumer the year round, more grocers would then maintain permanent stocks of honey. If they did, both the producer and packer should

in the long run realize a better profit. It is somewhat discouraging to interest a homemaker through a radio, magazine or newspaper release in using honey in her Spring Salad Dressing or her St. Valentine bridge luncheon only to have her report that no honey was available at her local store.

Stores cannot sell honey without displays. And how can we have displays regularly without reserve stocks! The January issue of "The Progressive Grocer," tells us in an article entitled "Display Backs Up Personal Selling," just how important mass displays are.

"Few grocers have found why it's so hard to do a good selling job from a **handful of goods on the shelf**. The reason is simple: No matter what the grocer says, the handful of goods denies it. No matter what the product, the half dozen cans tell the consumer that he is probably trying to clean up a "sticker." **A MASS DISPLAY**, arranged to indicate buying, sells side by side with the salesman. The display says what he says, and the display is believed when the salesman is doubted."

National Honey Week as sponsored for the past six years has stimulated producers, packers, and grocers to make Mass Displays; but these exhibits always have come at one time each year, namely during November.

During 1934 and 1935 reports from producers, packers, advertising agencies and food specialists indicate this encouraging development:

### NATIONAL HONEY WEEK PARTICIPATION HAS BECOME ROUTINE!

What was considered propaganda and questionable promotion in 1930 is acknowledged nationally as a **HONEY SALES GO-GETTER**.

With more "honey conscious" consumers in fall and winter than during spring and summer,

### IS THERE NOT A POSSIBILITY THAT THE HONEY MARKET COULD BE STABILIZED EVEN FURTHER WERE NATIONAL HONEY WEEK OBSERVED WHEN THE DEMAND IS SLOW AND INTEREST IS LOW?

A spring National Honey Week should aid in preventing an overloaded fall market, thus reducing the tendency toward price cutting. **Unless ample reserves of honey are available, the week itself at that season could not be successful.**

This spring, for instance, reserve stocks are not available. The market



is pretty well cleaned up and it would be almost impossible to get enough cooperation from producers and packers to "put the week over." Honey Weeks require stocks of honey and they are missing at this time.

Government reports (January, 1936) indicate that this year's prospects for a honey crop are fully normal. Breeders report that the present outlook is encouraging for heavy trade in package bees and queens and it is generally felt that the shortage of honey in many sections this season will increase the interest in beekeeping next year.

Considering these observations, it is reasonable to expect a normal if not bumper 1936 harvest and if the total harvest for 1936 could be 200 million pounds of honey instead of the 154 million secured this year, there should be a sufficient reserve stock of honey to assure a successful

#### NATIONAL HONEY WEEK DURING MARCH, 1937.

The date will probably be the week three weeks previous to the Lenten Season.

Another good reason for experimenting with a spring Honey Week is to get away from the competition

with other trade organizations. For instance, four weeks were observed in 1935 at exactly the same time National Honey Week was sponsored. They were Cheese Week, Fur Week, Book Week, Education Week. At Portland, Oregon, (and Portland is an excellent honey consuming center) cheese, furs, books, educational charts and honey were all featured at the same time. Honey secured but one-fifth of the attention it should have had.

The shifting of seasons for observing Honey Week does not mean that your Institute will discontinue its honey sales promotion during the coming fall and winter. Press notices, radio continuity, contact work, demonstrations and all other activity will continue as long as the Institute lives; but the concentrated efforts known as National Honey Week will come in the spring.

It is your reaction to this suggested change the Institute Staff would appreciate. Will you please write us just how you feel about a spring Honey Week and if you think you can cooperate in developing the one for March, 1937?

—American Honey Institute, Madison, Wisconsin.

—ABJ—



## Harold J. Clay and the Honey Market News Service

By H. F. Wilson,  
Wisconsin.

THE importance of the honey news letters being prepared in the Bureau of Agricultural Economics at Washington should not be underestimated by our beekeepers, and a great deal more use should be made of them. Also, many more beekeepers should be sending in information so that we can have more adequate statistical data concerning the number of beekeepers, number of colonies of bees, and the size and value of the honey crop.

How many of you appreciate that for nearly twenty years Mr. Harold J. Clay, a member of the staff of the Bureau of Agricultural Economics, has been collecting the information that it now the standard for estimating the various phases of the beekeeping industry in the United States? Only recently Mr. Clay compiled a very nice statistical picture of the bee industry in the United States for the years 1928-1934. This information is far from being satis-

factory, because the number of beekeepers reporting is only about 2,500.

A few beekeepers have met Mr. Clay, but I doubt if very many appreciate the really fine work that he has done for them. In spite of the limited number of reporters, the information prepared and sent out by the news reporting system would be of unusual value to our beekeepers in determining the price which they might expect to get for their honey, and a great many more beekeepers should be receiving these reports. All that you need to do is address a postal card to Mr. Clay, in care of the Bureau of Agricultural Economics at Washington.

Many beekeepers can do the industry a valuable service by offering to serve as reporters, and by sending in the blanks which Mr. Clay will forward to you upon request. Mr. Clay reports that an occasional beekeeper has made use of the reports, and as a result has held his honey crops and

received at a later period a much better price than he would have received, had he not taken advantage of the crop reports. The portion of these reports that is of particular value to beekeepers is the sales and prices paid for honey in the main honey buying centers. A study of these reports over a period of years shows that the New York market pays the highest price, the Chicago market somewhat lower, and the San Francisco market normally even a bit lower than the Chicago market.

We need to know more every year, about crop production, the crop available and the general marketing situation. During the past few years, there have been beekeepers who insisted on selling their honey at 4 cents when the wholesale market price was 6 cents, according to the news service. The statement is being continually made that there are upward of 800,000 beekeepers in the United States. It is not likely that this number would actually reach 500,000. If there was an average of 15,000 beekeepers in every state, we would have only in the neighborhood of 700,000. Even if the average were to run 10,000 for each state, we would have less than 500,000, so that there are probably not more than 400,000 to 500,000 people keeping bees in the United States. It has been estimated by various people that the wax production in the United States runs around 3,000,000 to 4,000,000 pounds per year. Mr. L. C. Dant has suggested that about 4 pounds of beeswax is secured through each 100 pounds of honey produced. On this basis, Mr. Clay points out that the production of beeswax during recent years has ranged from 6 million to eight and a half millions of pounds.

I am surprised that Mr. Clay has not long ago become discouraged, and given up the effort to collect statistics on bees and bee products. If we do not give better support to his efforts, it is more than likely that some day the men in charge of his work will decide to shift him to something else, and we will lose even the meager reports that we have.

We should have 15,000 or 20,000 beekeepers reporting regularly on honey production. All you need to do is to express your willingness to make reports by sending a postal card to Mr. Clay. He will put your name on his mailing list and send blanks regularly for you to fill in. He will also furnish every beekeeper who requests them, the market news letters containing the latest information regarding crop conditions and prices.

If you want to improve marketing conditions and secure a better distribution of honey, you must give some time to cooperation with the various agencies that are working for the benefit of beekeeping. Get acquainted with Mr. Clay and his work.

# Through South Carolina With Prevost

By a Virginian.



After years of concentrated work, under leaders like Prevost, South Carolina is rapidly drawing attention to its great advancement in beekeeping and its really excellent opportunities.

FROM the peaks of the picturesque Appalachian Range to the balmy semi-tropical marshes of the broad Atlantic, a great southern state expands slowly until it claims a shore line of some thousand miles or more, nosing the historical Savannah seaport of its neighbor on the south.

From south-west Virginia a lone traveler descends cautiously through the mountain trails lest his V-8 slip from the icy slopes of the narrow route and summersault over the precipices to the gurgling crystal stream a thousand feet below. From Appalachia, Virginia through Mountain City, Tennessee; Spruce Pine, Little Switzerland and Asheville, North Carolina, this splendor continues, ever inspiring to those who appreciate our greatest natural gift, old Mother Nature.

At Union, South Carolina, in the rich clay uplands, he meets two old friends, E. S. (Ned) Prevost, State Extension Bee Specialist from Clemson College and H. J. Cary from Norfolk, Virginia. Seriously missing Maurice Dadant our faithful companion of a year previous, we again open a series of beekeeping meetings in the morning of February twenty-second, with fifteen to twenty interested men and women, mostly bulk comb honey producers, attending. Moving to Spartanburg for the afternoon this number was trebled with a packed house of wide awake beekeepers. Delving into problems affecting fall, spring and summer management, with organization, sales, and American Honey Institute playing a leading role, we were forced to believe some good was accomplished. Being accustomed to the usual fifteen

or twenty attending meetings in other states, the packed house representing the Spartanburg County Association, presented an inspiring challenge for outsiders to match their strength.

Heading for Anderson to spend the week end we soon sighted the historic mound marked by two tall lonely chimneys, appearing as weird ghosts in the twilight. This is the place where Ned was born. Later we discovered that all roads out of Anderson passed these chimneys. A most peculiar phenomenon.

Anderson, a lovely city, famous for its beautiful women, is a manufacturing center in the cotton belt and bids fair to become the leading city in the state.

Sunday found us wandering over old plantations admiring the crumbling handwork of pioneers who lived and labored more than a century ago, in the hope that posterity would preserve their creations and continue to master the opposing forces of nature. Then a pleasant hour with Mrs. Prevost and Major Bowes.

Monday morning we chat with Dr. D. W. Watkins, Professor Dunavan and many other interesting people at Clemson College.

Another fine crowd of beekeepers met with us Monday afternoon in Anderson. Real honey producers they, trained in the practical methods of good beekeeping and facing the need for increased production on a rising market. Here too we met E. G. Ellison, one of South Carolina's leading queen breeders, located at Belton.

Tuesday morning at Newberry and afternoon at Saluda we were equally pleased with attendance and interest



Ned Prevost, Extension Apiarist,  
South Carolina.

displayed by beemen and their county agents. The veteran queen breeder A. P. Lake is a standard bearer of the Saluda Association and will quit fishing any time to attend a meeting of beekeepers.

The real thrill came at Walterboro Wednesday morning when fifty box hive beekeepers among others crowded around to learn the newer methods of keeping bees. In this low semi-tropical country where everything grows, blossoms and blooms, bees take care of themselves while their masters go fishing. The increased need for honey production, brought about by a noble person directing a great work (Mrs. Jensen and the American Honey Institute), has stirred these gentlemen to action and each one is demanding Ned's return each month to set and keep them right. What a piece of field work for one man and how it can be accomplished he only knows!

Wednesday afternoon we drive through the tall fascinating southern pines to Pineland for a delicious oyster supper with Mr. and Mrs. L. L. Ferebee, true friends creating living memoirs to those who know them well.

At Pineland, W. J. Synott is in charge of operations for Dr. M. C. Tanquary and are they doing things! A warehouse full of supplies, one man nailing frames, another nailing in wired foundation and others preparing queen cells or nuclei hives. A true large scale imitation of a beehive.

Thursday sees a second meeting in new territory at Lexington with interest booming. Our good friend T. P. Gaskin again tells of the strange

source of bitter honey near Lykesland.

There is something unusual about these South Carolina county meetings. Few state meets are so enthusiastically attended. County agents are awake to the possibilities. A movement is afoot to create a state organization and if Prevost gets behind it South Carolina State Beekeepers' Association will be second to none, for he is a true leader with a master knowledge of practical beekeeping in his state.

The possibilities for queen rearing, package bees and honey production in South Carolina are beginning to leak out. Many sections are well adapted to this work. Honeyflows on the uplands are rather slow with popular one of the principal sources. Extracted or bulk comb honey seems to be the most popular form of production. The market is open and price good. Many small farmers have found bees head their list of valuable assets. Beekeeping in South Carolina is steadily growing.

'Tis sad but true there must always be a parting. Thursday night we parted with an exciting penny-ante straight against a full house. The house won.

—ABJ—

## Poisoned Cotton Destroys Bees in Many Parts of Texas

Not for many years, have bees been so affected by insect poison as they have been this past summer and fall. Thousands of dollars of damage have been done in Texas by feeding on poisoned cotton. In many portions of Texas, beekeepers have almost been put out of business.

Cotton was visited by leafworm in July, causing cotton farmers to apply poison to destroy the worms and thus damaging the bees. Some beekeepers, who were also farmers, saved a part of the bees by shutting them up during the period of poisoning, but the frequent use of this method also destroys bees.

Beekeepers in the northern part of the state made a fine crop early in the year, during May and June, from horsemint and marigold, which is bringing a good price.

John R. Hancock,  
Texas.

—ABJ—

## Ancient Honeyflows

They had good honeyflows in old times, too. Purchas, writing of beekeeping among the ancients, says, "Some combs, in plentiful years, are shut up the first day." That would indicate a source of nectar equal to our sweet clover, at least while it lasted. Or perhaps it was sweet clover!—By W. H. Hull, Virginia.

# Trucking Package Bees Without Feeder Tins

By Mack McDougall,  
Manitoba.

IT is fortunate that the North is well adapted to honey production and that the South is better adapted to the production of package bees and queens due to a light continuous honeyflow favorable to breeding and not favorable for honey production.

I want to take you down to a little town in the state of Mississippi where one of the largest breeding apiaries of the southern states is located. In the spring, the colonies here are in two brood chambers well filled with bees and in good condition for shaking packages.

In the North we have considerable trouble with queens disappearing after packages are hived and nicely started. The shipper and I argued about the loss of queens. I gave the opinion that a superseding colony is one that has a poor queen and the bees, knowing this, build cells to replace her. Often the young queen and the old one may both be found laying on the same comb. When the young queen is well established, the old one disappears.

In our own practice, we never let new colonies get that far. Poor queens are killed at once and others introduced. I agreed, on returning to Canada, to see if I could determine more about this treacherous supersedure.

**This is what I found: Bees ball the queen. This is often caused either by handling bees under poor weather conditions, rough handling, or working colonies without smoke or working colonies too often.**

Colonies which have gone through such practice, when opened, are in such a pitch of anger that they immediately attack the queen. She will often be found dead afterwards in front of the hive or her wings will be torn badly.

I had colonies in one yard in which bees were found balling queens. Queens being balled were caged and put between the comb. On the next visit they were out laying and doing nicely. To me this proves that the queens were disturbed by the anger of the bees at the time of supersedure in colonies not so treated.

**—Here are good rules to follow in handling package bees: Open them only in good weather, handle them gently. Remove one comb first and lean it against the hive and then work the others, so you have plenty of room. Use the smoker judiciously. Keep the colony contented at all**

**times. Do not go through your bees any oftener than necessary.** Follow these rules and the queen loss will be much less.

Concerning the trucking of bees, for the past several years there have been several truck loads of bees brought into Manitoba from the southern states, with varying experiences. One truck driver with whom I talked had trouble with the feed cans dripping, causing a waste of syrup. Another difficulty is road restrictions, a weight of three tons being all one could haul including truck and driver.

The fall before I went South, I tried feeding packages which I shook from hives we were going to gas. The feeding was done with a brush. Some packages were left for a week without loss so I considered that I would try to bring the bees from the South without feeder cans. I went South with the idea of having no cans and stopping to feed once on the way back.

After the packages were prepared, they were put out in rows, with passages between and with a pail of sugar syrup and a 4-inch brush, a man went up one row and down the other brushing feed on the cages, feeding the bees continuously until they had all they would take.

Our packages were loaded with a 2-inch space between rows and piled nine packages high. This was really too high as the load was a bit top heavy. We couldn't get under the bridge at Emerson so had to go around it. We drove two and a half days then stopped to feed in the same manner and reloaded for Winnipeg.

Although we had a lot of car trouble, we made the trip to Winnipeg in five days with the bees in good condition and no loss.

We also had packages come by express without feed cans and they came through in good condition. The advantage is that there is no leaking of feed to cause a sticky mess. The cost of the cans is saved, the cost of sugar, the cost of the extra weight which cannot be overlooked on restricted highways. Stopping to feed the fresh syrup helps the bees especially when they go by truck.

Anyone with a little knowledge of bees can bring them back in the way I have described. I think mine was the first load of bees trucked without feeder tins. The method is probably still in the experimental stage but it is worth trying.



Soils, rainfall, and weather greatly influence the clovers. Sometimes fields like this, abounding in blossoms, yield little; then again, lesser bloom will result in a copious honeyflow.



The second of two articles on nectar secretion, a subject about which we have so far mostly surmised. Mr. MacLachlan by observing and putting facts together arrives at some pretty definite conclusions about what happens with plants under varying conditions of nectar flow.

# The Question of Nectar

By R. G. MacLachlan,  
Apicultural Editor, Australian Bee Journal.

## No. 2. Rainfall, Soils and Weather.

EARLY in the previous article I raised the question—why nectar at all? I pointed out that nectar secretion is not so closely related to seed fertilization as has commonly been thought. Most plants carry on from generation to generation without secreting nectar in noticeable quantities. Why then should some plants produce so much of it, when a smaller amount would serve the interests of the species as well, or sometimes better? These and other considerations make it seem likely that nectar flows come, not primarily to promote fertilization (though that too is done) but to restore the carbohydrate - nitrogen, or sugar - protein balance of the plant. Under certain

conditions, with certain plants, the sugars gain such a preponderance over the proteins that for the plant's welfare the sugars must overflow as nectar. And this overflow takes place at bloom time because there is then a natural determination of highly sugared sap toward the bloom; and in the bloom there is an area of "skin" through which this sugary sap can percolate.

In the case of plants yielding nectar through leaf nectaries something of the same sort happens. But with leaf nectaries, the mineral content of the nectar is higher, because the leaves have no seeds to be nourished, and leaf nectar is thus a little more like sap than flower nectar. And the

yielding of nectar from leaf nectaries only at bloom time is probably because then there is a movement of sugared sap from the storage tissues toward the extremities of branchlets, where leaf and flower nectaries are alike situated. The plant thus does two things in one movement. It keeps its stores of sugar used to form seeds till they are needed, and at the same time casts off its super-abundance in the form of nectar, restoring that balance of sugars and proteins in its body that is probably best for it in the long run.

This seems likely enough though I know of things that can be said against it. It will be seen that the conditions making for such a pre-



Heartsease (above) is one of the most dependable nectar producers. Seldom does it fail to yield in optimum soil conditions.

Locust (right) is a fickle yielder, often with gorgeous, fragrant bloom and no nectar.

ponderance of sugars are not all simple and obvious, though given normal seasons in a good honey country, they may seem simple enough. In Australia, from twenty to forty-five years ago, bloom and nectar came together so regularly that nobody asked any questions about nectar secretion. The occasional failures seemed just accidental. But during the last twenty years, and particularly during the last ten, it is bloom and nectar coming together that look accidental, failures being so many and so various in circumstance. In a general way, we connect failures with the irregularity of the seasons. During the long ago good years we had wet winters followed by hot dry summers. But lately the seasons have been all topsy turvy. Dry winters and cool or wet summers are frequent and though normal years (of the old kind) come at intervals, there is no run of them.

Looking back over thirty years, I can recall the honey harvests and the weather conditions, particularly as regards rainfalls, that preceded and accompanied them. And the lesson of their memories is that a chief factor in honeyflows is the rainfall between blooms. Our chief eucalypt blooms are normally biennial, and any rainfall after the last bloom, up to within two or three months of the next one seems to help the honey harvest. In dryer years (not too dry) the extra sunshine may counterbalance the lessened moisture. But our



Under right soil conditions, sweet clover will run a race to beat its own record in nectar yield. But out of its own home ground, it fails badly. Rainfall affects it seriously. It likes dry blooming weather.

sunshine and temperature are generally favorable, and it is the extra rainfall at the right times, that seems most to favor the accumulation of sugars in the trees.

Soils are another consideration, and clearly important, but just how or why cannot yet be said. An example will illustrate. One of our best honey trees is River Red Gum (*Eucalyptus rostrata*) which blooms every other summer during December and January. In some districts this tree, in favorable seasons, gives a return of 100 to 150 pounds per colony. In other districts equally well grown trees rarely give more than 20 to 30 pounds per colony. As climate, rainfall and other such factors are the same for all these districts, we can only put the difference down to soils. There are obvious differences of soils. But oddly enough the districts where Red Gum yields poorly, are notably rich for honey from other eucalypts. So it would seem that the question of soils is also complex, and is a question of soils in relation to particular trees or plants. A thing not surprising when we think of other plant products.

But now given the right soils, the right trees, or other honey plants, the right rainfall, sunlight and temperature, is a honey harvest certain? Thirty or forty years ago most Australian apiarists would have said yes. Now, they will say: "We know nothing till the honey is in the tank" and that is so—but why? And this leads to a consideration of the factors that make the stored up sugars of trees available or not available as nectar.

We have found that while the year as a whole may have seemed to favor a harvest, and the weather during bloom be perfect, the bloom may be barren. I have seen this happen a dozen or more times in thirty years. And on such occasions the cause seemed to be the same. It was a

heavy rain, or a succession of rains, amounting to many inches too soon before bloom time. I have noticed very often that after three to six inches of rain, just in bloom time, it is little use looking for honey within two months even with good harvest weather. (This applies to eucalypt flora mainly, not to meadow blooms.) The rare exceptions have a reason of their own, which do not invalidate the general principle of honeyflows.

This general principle I take to be the presence of conditions between blooms favorable to a preponderance of sugars over proteins in the plants and the presence during bloom time of conditions stimulating the plants, to release these stores of sugared sap, called nectar. Ordinarily good rains between blooms and dry warm weather during bloom, will provide these conditions. And these conditions suffice more often for field flora, rooted in the surface soil, than for trees, with roots deep in the subsoil. For with them, a heavy rain weeks before bloom may remove that preponderance of sugars over proteins in the tree on which the honey-flow depends.

It seems this way. Such a heavy rain (the amount varying with different seasons) will set the trees growing freely, and the superabundant sugars instead of concentrating toward the bloom will be circulated to make new wood. In extreme cases, this will be obvious in what the foresters call "crown growth," a bursting forth of young foliage at the tips of the branches. In less extreme cases the only sign is little or no nectar. With exceptionally heavy rains (ten inches in a week or two) it may be three or four months before there is honey again.

This has happened so often in my experience, and under such varying circumstances, that the fact is established for me. And the explanation given is congruous with the occasional exceptions. A flow from field flora may come very soon after a rain which makes tree bloom barren for two months. But too much rain will also make field flora barren, or fruitful of only the thinnest nectar, for weeks after good weather returns. And there are trees that yield only in seasons too wet for most species. And once in a while a flow will begin and continue in spite of rain in floods. But in such cases a look back over the seasons shows that the trees so holding and have given no honey for five or six years, whereas normally they should have given a flow every second year. This means that the preponderance of sugars in the trees is so great that nectar must come, spite of all.

There are minor happenings in the round of the seasons showing that the conditions favoring a banking up of sugars, are opposite to those favoring

their release as nectar. Growing conditions and harvest conditions are never the same. The ideal harvest conditions are those that check growth not too violently. Cool nights and hot days furnish such a condition. The cold night is one check, the hot day is another; the two acting together stimulate nectar secretion. This has been very noticeable here in barren seasons. In such times of bloom without nectar, a cold snap with night temperatures down about 40° F. and day temperatures not much beyond 60°, may last two or three days, being suddenly followed by summer weather with day temperatures up to 90°. The first of such days after a cold snap, may see the bees crowding the bloom for a few hours. A drop below 50° necessarily means a check on growth.

Something similar happens during a thunderstorm. If a flow is on, thundery weather increases it. If there is no flow, thundery weather may cause one. Here too the stimulus is a check on growth. Electric waves of more than half a volt intensity lessen the rate of growth in plants, while waves of three volts or more cause a shrinking back of the growing point. Hence the effect of a thunderstorm on nectar secretion.

This general effect of nectar secretion following a check on growth was brought out very clearly by the late Frederick Beuhne (the leader of Australian apiculture for a generation) in some experiments made in 1924. Mr. Beuhne plucked two sprays of Blue Gum (*Eucalyptus globulus*) bloom; one spray placed in water immediately secreted no nectar; the other placed in water after four hours filled its large flower cups with nectar. This happened every time the experiment was repeated.

The theory of nectar secretion here set forth covers most of the phenomena of honey harvests that I have met with in thirty years. It does not cover them all. There have been occasional happenings that go beyond this theory, which I put forward simply as a basis and guiding line for observation and experiment. Such observation and experiment may either establish it or lead on to something better. But the arrival at a true explanation of the causes of nectar secretion brings a hitherto unbridled activity of nature under control. For if we know just what causes honeyflows, we can find out ways of supplying at least some of the right conditions.

We may not be able to make honey flora as amendable as fruit trees, but we can go in that direction. The fruit-grower does not let his trees look after themselves, he seeks ways of putting them in a condition to bear fruit. Honey plants cannot be treated in just the same way; at any rate not yet. But some degree of management

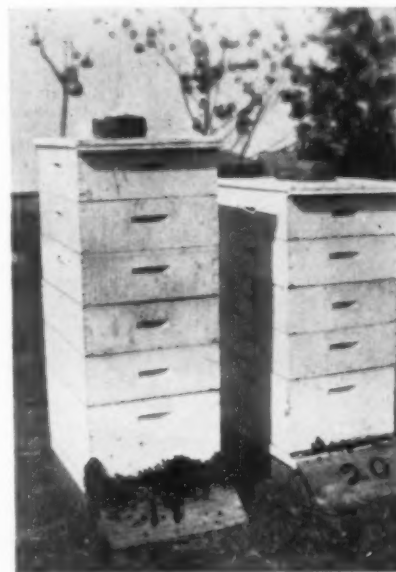
will likely be a feature of the beekeeping of the future. How far management will go will depend on the kind of flora in use. Entirely wild flora may be out of control, but field flora, or tree flora need not be so. That, however, is all for the future. There is much observing and experimenting to do first.

—ABJ—

## Numbering Hives

By J. A. Reed.

Missouri.



I could not keep from smiling when I saw on page 519 Lee Stewart's hives with the number 55 on the super and 29 on the hive body. Then on page 25 I laughed out loud when I saw Mr. Stockdale's fine sky scrapers with four different numbers on the same stand.

I like Mr. Stewart's hive stand and wish I could stack up the supers like Mr. Stockdale, but I wonder what those numbers indicate? I would expect just such a mixup in my bee yard if I had numbered the hives instead of the hive stands.

I am sending a picture of two of my hives which show that **my stands are numbered**. Don't you think it looks better to number the stand instead of the hives?

[If you use hive stands, it certainly is a better scheme. Some beekeepers number the location and when the colonies are changed and they do not use hive stands, the numbers are changed so that the numbers are kept with the location and not moved with the hives. The old numbers are put on new hives brought to the old location and in this way the location always carries the same number. In any system of numbering, it is easy to mix up the supers and hive bodies, when the numbers are kept with equipment.—Ed.]



# HONEY GETTING



Colonies that store honey without attempting to swarm, display supers that rise head high. They are really getting honey.

## Summary of No. 1. An Introduction.

**T**HIS will be a long series of articles having to do with the getting of honey.

Control of swarming is the foundation of success in honey getting. To control swarming the activity of the queen must be under control.

A successful operator will work out for himself a method of management which gives adequate control of colony activity with the least possible labor. Bees always react the same way to the same conditions, the trouble being to determine when conditions are the same.

Labor used in producing honey is an important factor in its cost, varying from more than half the total gross cost in smaller apiaries to slightly more than one third in the larger businesses. The beekeeper who would produce honey profitably must replace man labor with bee labor.

These articles will consider practices which will help to insure the basic factors for honey getting, leaving it to the reader to adapt them to his own conditions.

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**T**O get surplus honey profitably, the natural bee colony, which stores some honey, and then swarms, must be transformed into a colony or colonies which will continue to store honey without attempting to swarm.

To accomplish this, the usable brood nest must be large enough for

the queen to lay as many eggs as are needed to build up the colony to standard honey-storing strength at the right time and this brood nest must be immediately under the supers in which the honey is to be stored.

The essential factors for honey-getting are (1) adequate\* colony population; (2) location in a good nectar producing area; (3) prompt beginning of work in the supers, (4) continuation of this work without interruption; (5) continuous replacement of bees that die during the honeyflow; and (6) such strength at the end of the season that the colony will reach the next honey season in the desired condition.

To obtain adequate population for a honey-getting colony, a good queen, producing vigorous bees is essential, together with plenty of stores and sufficient egg-laying space during the time it is needed. For prompt and continuous work in the supers, a large brood chamber immediately below them is essential. This brood nest must have plenty of worker cells for the rearing of as many bees as are needed, swarming must be controlled, and sufficient space for storing

\*It may be noticed that the words "adequate" and "sufficient" are used rather frequently. This is because no person except the operator himself is able to say just what is "adequate" or "sufficient" for any given location or any operator's system of management. The operator must decide such details for himself, using his best judgment and experience.

## II.

### Essential Factors in Profitable Honey Getting and How to Provide Them.

By E. L. Sechrist,  
Tahiti.

"The whole system of modern bee culture is a transgression of Nature's laws, so called. In some things it is advisable to allow Nature to have her way, in others it is not, and we have the best success when we have learned just where we can, advantageously, and to a certain extent, cross Nature's methods with those of man's intelligence."—W. Z. Hutchinson.

surplus honey must be provided. After the honey season is over, maximum brood rearing should not continue but enough brood should be reared to insure an adequate winter population.

Whatever system is followed for honey-getting, the basic idea is that the usable brood nest must be large enough for the queen to lay as many eggs as are needed to build up a colony which is in standard spring condition to standard honey-storing strength at just the right time, neither too early nor too late; and that this brood nest, as said above, must be immediately under the supers in which honey is to be stored. Nothing is more important than to have brood combs which approach perfection.

Standard spring condition is defined as that combination of quality of queen, colony population, condition of combs, amount of stores, and all other natural and mechanical conditions which, with a standard method of management, will produce a colony of standard honey-storing strength at the beginning of the honeyflow.

Standard honey-storing strength means that a colony has such a population and is in such condition that, under the system of management used by the operator, it will store an adequate amount of honey at low cost. Both standard spring condition and standard honey-storing strength will vary with local conditions and with the system of management used

and must be determined by each operator for himself.

A fuller discussion of these paragraphs in black-face type immediately follows, while the methods and essentials of apiary management for honey-getting are discussed in following chapters.

## DISCUSSION OF THE SIX ESSENTIAL FACTORS IN HONEY PRODUCTION

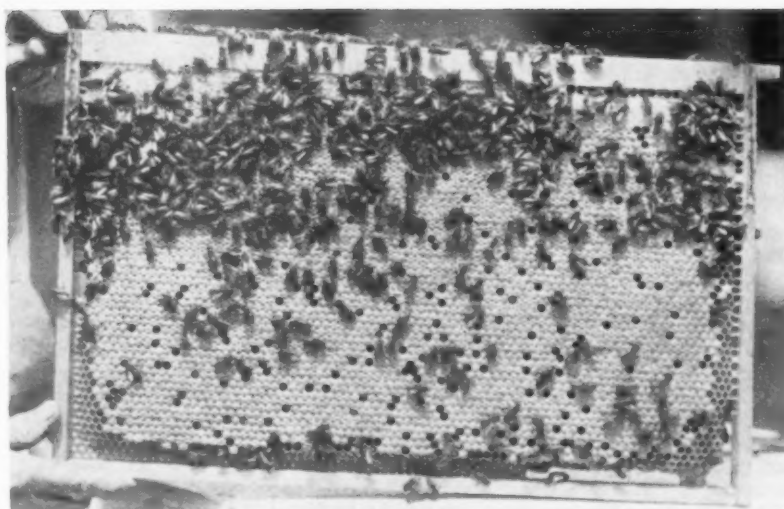
### (1) Adequate Colony Population and Standard Honey-Storing Strength.

It is a common occurrence, not only among beginners but among commercial beekeepers, that colonies become strong enough to work in the supers only after the honey flowers are past their best blooming period; or that strong colonies do nothing during a good flow of nectar because the storing instinct is not dominant.

Every spring manipulation should be directed toward getting the greatest number of vigorous workers at the proper time, and keeping the entire working force of each colony together and contentedly at work during the honeyflow. Mistakes have been made, with consequent loss of honey crop, by some who gave their attention to securing an enormous number of bees in a colony while neglecting the important factor of keeping them contentedly at work. Particularly in localities having long honeyflows, it is often necessary either to divide these enormously strong colonies of bees or otherwise reduce their strength; or, if they become weak, again to build up their population in order to keep the storing instinct dominant throughout the honeyflow.

Standard honey-storing strength does not necessarily mean the maximum bee population which can be secured in a given colony, although conditions may be such, at times, particularly where the honeyflow is short and rapid, that the maximum population will also be found in the colony of standard honey-storing strength. More often, however, it will be far below the maximum population.

Standard honey-storing strength is more, however, than merely adequate bee population. The workers must be of the proper age, brood must be adequate to continue the population, the queen must be good, and the morale of the colony must be directed to honey storing. Standard honey-storing strength is, therefore, that hive population, both of field and hive bees which, affected by all the limiting factors present, will result in the storing of a good crop of honey without any attempt at swarming. In this colony the storing impulse will predominate and will continue through the honeyflow. A compact brood nest carrying ten to twelve frames of brood is a good basis for



Keep only good worker combs in the brood nest that will produce harvest bees in quantity.

a colony of standard honey-storing strength.

For each location, there will be a number of these limiting factors, any one of which may, at a certain time, appear to be the only limiting factor which tends to cause disturbance of the storing impulse resulting in attempts at swarming. Actually, however, a number of limiting factors will be at work influencing the behavior of the colony even though but one may attract the attention of the operator.

Among these limiting factors may be mentioned the personality of the operator and the system of management which he uses, locality conditions as to minor and major nectar flora, weather conditions, date at which the honeyflow begins as well as its length and intensity, character and quantity of storage space provided, although this factor is intimately connected with apiary management and honeyflow.

Colony condition is also an important limiting factor, this including the number of bees of different ages, quantity of brood in the hive, age and character of the queen. Another limiting factor which is often overlooked although it is really a part of apiary management, is that of disturbance to the colony by injudicious work with it, by an uncomfortable hive, or by any surroundings which tend to break the normal routine of honey-storing, thereby developing the swarming impulse.

To secure the standard honey-storing strength which the apiarist has decided he needs for best results in honey-getting, the colony must have a good queen and enough bees, together with sufficient stores and egg-laying space during the time it is needed. This may involve certain manipulations to insure plenty of worker cells in the brood nest during the earlier part of the season, with less space when the population is to

be decreased. Such manipulations should require a minimum of man labor.

While the management for securing workers for the honeyflow begins during the previous late summer and early autumn, the fall work on this subject will not be considered here, further than to state that it includes two main factors: providing favorable conditions for production of bees for the winter colony, and conserving the energy of these bees during the broodless part of winter and in the beginning of the brood rearing period.

The broodless period varies from several months in regions having a cold winter, to less than a month in some parts of California. In some parts of the tropics, as in Tahiti, where there is no absolute dearth of nectar and no very dry or cold season, there is no broodless period, four to six frames of brood being the least ever found in a normal colony.

Building up the colony after the adversities of winter so that standard honey-storing strength is reached about the beginning of the main honeyflow will, however, be considered. In this work the function of the beekeeper is to see that each colony is headed by a good queen in time to produce the needed force of bees, and then to supply any deficiency that may exist in food, in protection, and in room for brood rearing. Such attention should result in uniform colonies. Most failures to have all colonies uniform and profitably populous at the beginning of the honeyflow are due to negligence on the part of the beekeeper in anticipating and supplying the needs of the colony. A colony in standard spring condition, if properly cared for, will produce a colony which, if weather and location be good, will store a surplus of honey if the beekeeper performs his second duty of keeping the stor-

ing instinct dominant in the colony.

During the spring, although the beekeeper is anxious to see that bee energy is not wasted, he desires that it be used effectively in brood rearing. The season when brood is to be reared, and the amount of it, must be considered carefully because of the differences in honeyflows. In many localities there is only one short, rapid honeyflow that furnishes much surplus. In other places there may be a series of short honeyflows, each furnishing some surplus. Elsewhere are localities which furnish a continuous and moderate flow for months at a time. Each type of location present a problem which must have individual and intelligent attention if the solution, a good crop of honey, is to be achieved.

When brood rearing begins in the spring, the consumption of stores is greatly increased over that of winter; and, as the period of maximum brood rearing is reached, the consumption of stores increases enormously. At this time many colonies, particularly strong ones, are in danger of running short of stores, both honey and pollen. It requires nearly a frame full of honey and much pollen to rear a frame of brood. Colonies which run short of stores during the brood rearing period may be so severely retarded, even though they do not die, that they cannot attain profitable strength in time for the honeyflow. All colonies not so abundantly supplied with stores in the fall that they have plenty for spring brood rearing should have an early spring examination and be supplied with what they need.

Starvation conditions in the spring frequently occur where there is no early flow from dandelion or other spring flowers, or where, after such an early flow has caused bees to begin extensive brood rearing, there comes a dearth of nectar lasting a few weeks or a month. At such times, with much brood to feed and with insufficient honey or pollen, the colony may become so reduced that recovery in time to store a good surplus is impossible. All through the spring each colony should have ten to fifteen pounds of honey in excess of its daily needs. Otherwise the risk is great that brood rearing will proceed sparingly at some time when the beekeeper is not aware of it, even though the colony does not seem starved.

It is also true that many colonies have starved through their effort to rear brood—have starved even with a few pounds of honey in the hive. Particularly is this likely to occur when the honey is extremely heavy in body, as it is in some regions, or if it has crystallized during the winter. If the weather and the colony conditions are such that the bees are unable to carry to the hive enough

water to dilute this heavy or granulated honey, they may starve with plenty of honey in the hives. Feeding water or a very thin syrup at such times may save a colony from starvation.

If feeding is necessary, most extensive producers of honey prefer to give each needy colony several frames of sealed honey or ten to fifteen pounds of sugar syrup at one time, although some prefer to feed a small amount of syrup daily to stimulate brood rearing. Under some conditions such stimulative feeding is profitable during the weeks just previous to the honeyflow. Where, however, there is plenty of fresh nectar and pollen, stimulative feeding is not needed. As pollen is essential to brood rearing, the fall management should be such that considerable pollen is carried over winter in the combs in the hive unless it is certain there will be plenty of fresh pollen available in the spring.

Some beekeepers who winter their bees in cellars find it profitable, after the bees have been set out, to give them some sort of protection to insure continuous brood rearing during cold snaps. Brood rearing requires a temperature of about 93° F. while the best winter temperature within the hive is only 57°. Therefore the colony must expend so much food and effort in keeping up during cool weather the high temperature required for brood rearing that it may need protection more during spring than in winter. This is particularly true in regions where considerable inclement weather is experienced after bees have begun to rear brood, and in open locations where bees have no shelter from wind. An apiary location well protected against cold winds is of great importance in spring.

#### Good Combs Important

Perhaps the most important factor in honey production is to have, in the brood chamber, combs that approach perfection. The importance of this is not generally understood, and it is no uncommon thing to find, even in the apiaries of commercial beekeepers, hives in which the brood capacity is cut in half because of poor combs in the brood nest.

These poor combs are not necessarily drone combs; indeed, they usually are not, but are worker combs which, because of sagging, buckling, or other injury, contain many cells in which no brood whatever is reared, these misshapen cells being used for storage of honey and pollen. When a beekeeper, at a time when a colony is breeding up rapidly, finds combs in the brood nest that contain an inch or two of honey just under the top bar, he can be pretty certain the comb is a faulty one which should have no place in the brood chamber. If a colony contains a good queen, the combs in the main part of the

brood nest will have brood solid to the top and bottom bars during the main breeding season if the combs are good enough to permit it.

Much better results are secured by having a clear brood nest in one hive body full of such combs, than by having the same amount of available space scattered through twice as many frames in two hive bodies.

Poor combs should be sorted out at a time when the combs are empty of honey, as it is seldom one can be sure whether an old comb full of honey is a good one or whether it should be discarded.

Beekeepers frequently place poor combs in the extracting supers, saying that they are perfectly good for that purpose. And this might be true if beekeepers were not just ordinary human beings who, when selecting combs for winter stores, find it impossible or impracticable to separate the poor combs from the good. Thus it is almost certain that many poor combs which were once removed from brood chambers to be used in supers will, in the course of a year or two, again turn up in brood chambers where they may remain all summer, creating barriers of honey within the brood nest, decreasing the size of the colony and the yield of honey, and greatly increasing the trouble from swarming. The only safe thing to do, after a poor comb has been sorted out, is to melt it up for wax before it can, through some accident or carelessness, again find its way into a brood nest. Making this a yearly practice will result in one of the greatest savings any beekeeper can make.

If there is any uncertainty as to whether a comb is sagged, hold it up to the eye and sight along the the row of cells, or take a ruler or straight edge and lay it on the comb along a row of cells. When perceptible sagging, or buckling along the bottom bar is observed, the comb is not good enough to be in the brood chamber, and may be expected to slow up or stop brood rearing and to cause swarming. If a queen, when busy laying eggs, must leave part of a comb unoccupied because it is not fit for rearing worker brood, her work is hindered and fewer bees are reared.

Once brood rearing has begun, it should receive no check, except in certain localities until after the honeyflow has commenced. In localities where the main honeyflow comes very late it may be well to keep brood rearing at a minimum for several months.

A good motto for the beekeeper is: "MELT ALL POOR COMBS YEARLY."

#### (2) Location In An Area Having Adequate Nectar Production.

Unless an abundant supply of nectar is available, no system of man-



agement will be successful in getting honey. Where agricultural conditions change rapidly, the area of nectar-producing plants available at any location may need to be checked yearly and, if not found sufficient, apiaries may have to be moved to new locations.

### (3) Prompt Starting of Work in the Supers at the Beginning of the Honeyflow.

To insure prompt beginning of work in the supers, it is necessary that the brood nest be so located with respect to the supers that the bees can follow their natural instinct to store honey in closest proximity to it. The brood nest should, therefore, extend from side to side of the brood chamber, immediately below the supers, the brood reaching to the top bars of the frames, with no space in which honey can be stored without possibility of removing it with ease. To the end of securing such a brood nest, all the combs in the brood chamber, whether it be one story or two, should be excellent worker combs.

### (4) Continuation of Work in the Supers Without Interruption.

For continuance of work in the supers the colony must have what may well be called a clear brood nest, that is, one in which plenty of worker cells are available for the deposition of eggs, and also sufficient properly located space for storing surplus honey. The colony must not lose its effectiveness in storing honey because of swarming.

### (5) Continuous Replacement of the Bees That Die.

To insure an effective force of workers when needed, the queen must lay enough eggs to produce as many mature bees as can be used profitably during the honey harvest. Requeening each season is usually profitable, and requeening during the honey harvest may even be necessary to insure sufficient eggs, if the harvest is of long duration, as when there are several important honeyflows.

### (6) Condition of the Colony at the End of the Season.

As the honey season closes fewer eggs are laid and honey is stored in the brood combs. Maximum brood rearing should not continue when the resultant bees will no longer be required for honey production, although enough brood should be reared at the proper time to insure the colony an adequate winter population. A good queen and adequate stores, as may naturally result from a fall honeyflow together with sufficient comb space, all at the proper time, are necessary to insure a colony that will winter well and be in standard condition the next spring.

# SPICE

By Elmer.

Congratulations, C. P. Dadant, it must be wonderful to be married over sixty years to the same woman.

\* \* \*

Here are alphabet combinations that mean something: AHI, ABJ.

\* \* \*

What price honey?

\* \* \*

War news! They say Italians are no worse at robbing than others.

\* \* \*

If you want a gentle bee, let MORLEY PETTIT.

\* \* \*

It was hard to recognize Professor Kelty at the Detroit meeting, without his bow tie.

\* \* \*

Detroit is crashing the news with its traffic problem. No wonder, last week while traveling in the city, we approached an intersection and right in front of us was a traffic cop rolling one of those portable semaphores on an angle. It kept saying stop-go-stop-go-stop-go. To be safe we did both.

\* \* \*

To clarify or not to clarify, that is the question.

\* \* \*

Federal market report—honey getting scarce. There is LOTZ in Boyd, Wisconsin.

\* \* \*

Stick with the bees. There's CALE in beekeeping.

\* \* \*

Speaking of fruit, BARTLETT pairs his hives.

\* \* \*

Sunshine in Southern states? They say it's KNIGHT in Alabama.

\* \* \*

The BARBER from Kellogg's does a nice job.

\* \* \*

Have you a little honey in your home?

\* \* \*

Scotch horticulture SOS. HOOTMAN. (Michigan State College.)

\* \* \*

Did anyone see DAVID RUNNING for Alabama?

\* \* \*

Hats off to Mrs. Jensen, queen bee of the Institute.

\* \* \*

When the season is bad I get WILDER.

\* \* \*

For those who do imbid, here is a teaser to test those tightening muscles about the mouth. Say "statistics." If you can't, better take a taxi, and call for your car next day.

The sweetest week of the year, National Honey Week.

\* \* \*

Dr. O. W. Park gets a real welcome when he enters any town. Signs along the street read, Park here.

\* \* \*

Many a queen has made a drone into a worker.

\* \* \*

That Florida climate would undoubtedly be very pleasant, if it could only be caught young and tamed, and taught to stand still.

\* \* \*

A rolling stone gathers no moss, does a rolling PELLETT gather pollen?

\* \* \*

In Virginia they say "HULL-o."

\* \* \*

Deer hunter says fire lanes are built for deer hunters. Michigan deer are braver than I am if they cross one. It looks like "the front line" with a hunter every rod sitting on a stump.

—ABJ—

## A Trick in Getting the Wax

I have an old German steam wax press made once upon a time by Root. Such a press is pictured in Dr. Miller's book. After I have pressed out all the wax possible, I release the screw, open the sack, and pour a tea kettle of boiling water through the sack and slungum. Then I repress. There is then about enough wax to color the water. Ten Langstroth brood combs yield about 2½ pounds and ten shallow extracting frames 2 pounds. Making wax from old combs with a small press is a profitable use of time when little or no value is placed on the combs. Capacity depends mostly on melting facilities.

Ivan Whiting,  
Illinois.

—ABJ—

## 3,500 Bees Per Pound

In our Questions and Answers Department this month, a question is asked regarding the number of bees to the pound. The common figure is 5,000. The question has been answered by our Senior Apiculturist, Jas. I. Hambleton of the United States Department of Agriculture in which the figure 3,337 is used as a more accurate figure per pound than the ordinary 5,000 on which we have been depending.

Read the question over and revise your figures accordingly.

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### PACKAGE BEES AND ITALIAN QUEENS FOR 1936

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**R. E. LABARRE**  
Shasta Co., Cottonwood, California.



By G. H. Cale

**W**HEW, what a relief!

To sit back on this beautiful March day and remember, is so much more comfortable than to look at the thermometer and face another twenty-four hours of gloom. All beekeepers have gone through such experience this winter, one of the worst in the history of weather records. Periods of zero or sub-zero varied greatly but probably the average severe cold lasted from six weeks to two months. Many report no flight in outdoor wintered bees since last November.

Here in the middle latitude, we had very good flight about the 20th of January, when Old Man Alaska tooted out the first blast down through Prince Albert that sent us hurrying to coal bins. Without warning, normal Canadian winter temperature moved down to central Illinois and stayed until the 20th day of February when the bees again had a flight.

Odd things happened in this time. **The bees did not die from cold.** They moved to the top of their combs and, being without food above them, they starved instead because they could not move to the abundant stores of honey on either side. Doolittle said years ago, "Bees do not die of cold; they starve to death." All of our loss may be accounted for this way.

A few colonies, just before exhausting stores, started brood rearing. The majority showed no signs of brood. The loss here varied from 10 to 25 per cent; further east 30 to 50 per cent; north 50 per cent or more. Package shippers this year should reap a harvest.

And how glad we are that they are able to do so. Years ago, with losses like this, it was impossible to recover except over a period of years and now, with reasonable financial safety, losses may be quickly replaced. So, under modern circumstances, the most valuable part of our outfit is the equipment—hives, supers and combs.

I like the articles that have been started by E. L. Sechrist, of Tahiti, on "Honey Getting." They are fundamental. It has been our privilege to read the entire series and we hope

that readers will agree with us as time goes on that Mr. Sechrist is really getting down to the things which we should know if we are to keep bees successfully.

Probably one of the most important articles that has appeared in recent time is the reproduction of the article on spring management by Dr. Miller taken from Gleanings, of April, 1917. We have had more comments on it than anything that has appeared in a long time. From the standpoint of apiary management, the rule set down is fundamental: "When you're building up, always help first those that need help the least, leaving the weakest to be helped last. In drawing from the strong to help the weak, never reduce strong colonies to less than four combs of brood. If you keep these two rules in mind, there can hardly be any danger of making a mistake in building up colonies in the spring."

The caution we would add is that in changing combs from one hive to another or from one yard to another, it must be kept in mind, especially by the beginner, that it is very easy thus to spread disease. The beekeeper should be very well posted on the appearance of American foulbrood before he tries this kind of procedure. Nevertheless it is fine practice when conditions are favorable.

We have read the editorial a number of times, in the December number, "Who Is to Blame?" It concerns the criticism of honey packers because they offer low prices for honey. According to the editorial "They must do so to remain in business because so many honey producers make no distinction between wholesale and retail prices for selling honey. The packer must sell in competition with local honey in any market. **Therefore, the beekeeper competes against himself.**

It is too bad that the total circulation of beekeeping magazines in this country reaches no more than thirty or forty thousand beekeepers of the supposed 500,000 producers conservatively estimated to be the total. If the thirty thousand readers could all be educated in the fundamental marketing precept that honey must be priced according to its distribution and packers and retailers must be protected, there

would still be 450,000 ignorant ones to make the problem difficult to solve.

— o —

We were eager this spring, at the first opportunity, to look at the colonies requeened in the fall broodless period last year in November. 250 queens were put in this way continuing our experiment along this line. Apparently all were accepted.

Two things now become quite evident: (1) That the requeened cluster at that time of year is bound to be a poor one, otherwise we would not try to requeen. Of course, the new queen, introduced late in the season, will not alter the condition of the cluster. No brood will be reared until spring from that queen. Therefore, this spring, those late requeened fall colonies are the weak spring colonies, some of them quite weak.

(2) On the other hand, the queens are laying vigorously so that without a supporting cluster, they lay several eggs in a cell. I expect these weak colonies to forge ahead and equal any at the time of the honeyflow. We will see. If it is not so, then this practice is faulty. We will report about it later.

— o —

Wonder how the honey plants came through? Here the white Dutch clover, the old standby of the Middle West, is like hair on a dog's back. With plenty of rains this spring and a good growing period, there'll be an old fashioned clover crop. I suppose then, in the sweet clover country, bees will be just making a living when white Dutch clover bees are storing a surplus. Where white Dutch and sweet clover come together, perhaps it will be hard to put on enough supers, this year. Why is it that good crops always follow severe winters?

— o —

Had a lucky break at one yard last week. Got there just in time to shut up a colony which had some disease but which the bees had not yet robbed. One of the most important things in spring is to prevent just such an occurrence as this. Early dead colonies may be diseased ones. We can't be too careful to get these out of the way in a hurry.

— o —

Did you ever notice that robbing usually starts in earnest at the time the first pollen is abundant? For a few days here, when maples began to bloom, bees could be found everywhere, on the neighbor's lawns, in the grass along the roadsides, darting about everywhere, just coming to life with the first spring bloom.

Before this, hives may be opened and examined with more or less care and safety. After this, look out! They're ready to rob at the drop of a hat until nectar is available. Do your early work before the first pollen.



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When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

**Number of Bees in a Pound**

How many bees are there in a pound? Figures vary. What is correct? OHIO.

(Answered by Jas. I. Hambleton, Senior Apiculturist, U. S. D. A.)—In our work, we find it entirely unreliable to use the figures of 5,000 bees per pound to arrive at calculations. We always take a representative sample weigh this, count the bees, and then make the calculation of the number of bees per pound.

In Technical Bulletin No. 309, "The Development of Package Bee Colonies," (page 24, table 9), Mr. Nolan gives figures of the average weight of individual bees in packages. The minimum average weight was 102.71 milligrams per bee, requiring 4,416 bees to a pound. The maximum weight was 168.06 milligrams per bee or 2,705 bees per pound. The average of samples from 45 packages was 135.85 milligrams per bee or 3,337 bees per pound.

Since the number of bees per pound is of interest primarily in connection with package bees and since package bees invariably have all the food they need, consideration could well be given to the use of a new figure. Mr. Nolan's average figure of 3,337 bees per pound is unquestionably a more accurate figure than 5,000.

—ABJ—

**Feeding Package Bees**

Question.—For building up package bees, should the Brother Adam feeder be set for slow or rapid feeding? ILLINOIS.

Answer.—Slow feeding. Rapid feeding results in clogging combs with stores and results in cutting down the brood space.

—ABJ—

**Assembling Frames Correctly**

In assembling frames, is it correct to put beveled end pieces opposite or should they be assembled with flat sides on one side and beveled on the other? ALABAMA.

Answer.—In assembling frames, put the bevel opposite the flat and always keep the order the same. Grasp the side bar with the bevel in the fold of the fingers, putting the side bar into the top bar. Reverse, the top bar for the next side bar in the same manner and you will always have a bevel opposite a flat edge and always in the same way so that all frames in all hives fit correctly.

—ABJ—

**Creosote for Hives**

As a rot arrester and preservative, how extensively may creosote be used? The grade ordinarily used on fence posts.

Will bees refuse to accept a hive on which it is used, even in limited quantities? I desire to start on the bottom boards, inside and out and on the corners where rot has started. Also on the cover boards.

NEBRASKA.

Answer.—We have used creosote on bottom boards, painting them twice and drying in the sun. We have never found it objectionable after thorough drying. I think it would be all right in the corner of hives as

you suggest. It is hard to paint over it. We have also used asphalt paint successfully.

—ABJ—

**Colonies on Shares—Limit of Bees Per Man—Income**

1. Is it possible for a man who knows his business to run 400 colonies on shares and make a decent living? Say \$800.00 to \$1,000.00 each per year?

2. How many colonies should one man run for extracted honey to have work twelve months a year?

3. What is the average monthly wage paid efficient helpers by the average beekeeper?

4. Do you think there are many beekeepers that furnish work the year around or is it only a summer's job?

5. In your opinion, what is the future for a man who likes beekeeping and knows his business? OHIO.

Answer.—1. 400 colonies in a location where the record of yearly production for eight or ten years is 100 pounds per colony per year, would give about the income you suggest for each of two men in a 400 colony partnership. The thing to do is to determine such a location. The records of beekeepers are the best source of information.

2. About 500. Even that would give you an idle period from November until March with the exception of work with equipment in winter.

3. \$30 to \$75 depending on experience. The usual initial wage is \$30.

4. Very few furnish year around work. It is usually a summer job.

5. Beekeeping is as good as any other agricultural pursuit. It is not an occupation promising great fortune. With hard work and intelligence, it offers a living in keeping with the average agricultural income.

—ABJ—

**Charges for Orchard Bees—Anise for Bees**

1. What is the per colony charge for renting bees to orchardists?

2. Bee hunters here use sweet anise sprinkled on the comb for attracting bees. A neighbor beekeeper claims he lost his bees because they sucked this anise and on returning to the hive, the bees started fighting. Can you explain this? MISSOURI.

Answer.—1. The per colony charge for bees in orchards varies. Some Michigan orchards pay \$3.00, \$4.00 and even \$5.00 per colony. The usual rental price would run from \$2.00 to \$3.00.

2. About the fighting among the bees, perhaps some of the bees returning to the hive did smell of anise but our notion is the neighbor had a bad case of robbing. Apparently the colonies somewhat weak were robbed by others. Closing the entrance to a single bee space would have helped. We do not think that the bee hunter should be blamed in this case.

—ABJ—

**Carniolan Bees**

What can you tell me about Carniolans in comparison with Italians? The past three years here in New York the temperature has ranged to 32° below zero. Would this bee stand such cold weather? I pack my

bees in straw and last winter lost one colony in fifteen. NEW YORK.

(Answer by Dr. Erwin C. Alfonsus, Wisconsin.)—Livestock keepers—whether interested in cattle, poultry, or bees will always show varying preferences for breeds, types, and races.

According to various articles and text books, the Carniolan bees are harder than the Italian bees. However, experimental evidence on this subject is lacking. Regardless of race, strong, well packed colonies with an adequate supply of good stores will winter successfully even under severe conditions.

Carniolan queens appear to be somewhat more prolific than Italian queens. This high

prolificness causes a swift spring build-up, but usually leads to swarming. It would appear that the only advantage of pure bred Carniolan bees is their uniform gentleness.

Carniola, the homeland of this race, is a hilly country with a reputation for cold winters, hence the hardness of the Carniolan bee. The winters of Carniola are not usually more severe than those of upper Italy. If the hardness of a race of bees is to be judged by the climate of its native country, attention would center on the Caucasian race. It is the only one indigenous to a mountain range with long and severe seasons very much like the winters of the northern part of North America.

—ABJ—



#### International Congress, San Antonio

The big event of the year will be the San Antonio, Texas, meeting of American Honey Producers' League, American Honey Institute, and the Southern Beekeepers' Conference. The program will be different; lively, entertaining, with visits and side trips and a conducted tour to Mexico. Foreign beekeeping units already have decided to attend and the delegations from the West and Southwest will be large, beekeepers who have never before had a chance to be with us at the National meetings. Read the lead editorial in this issue and watch these columns for further details as the plans are perfected.

— 0 —

#### Michigan and Ohio Beekeepers at Adrian, April 17th

The south-eastern Michigan and northern Ohio beekeepers will hold their annual spring meeting in Adrian, Michigan, April 17th, at 10 a. m. The program will include Charles Reese, State Apiarist of Ohio; Jack Deyell, of Gleanings in Bee Culture; D. P. Barrett, Michigan State Inspector; M. N. Dillon, Michigan producer; R. H. Kelty, East Lansing, and local talent.

R. H. Kelty,  
Michigan.

— 0 —

#### St. Clair Association Offers Your Favorite Bee Journal Free

In connection with the mid-summer meeting of the Illinois State Beekeepers' Association, to be held at Marissa, Illinois, Sunday, June 21, 1936, the St. Clair Beekeepers' Association are offering a two year subscription to the American Bee Journal or Gleanings in Bee Culture for the best letter on each of the following subjects:

Why I Take a Bee Journal.

Why I Belong to a Beekeepers' Association.

Why I Do Not See Any Advantage in Belonging to a Beekeepers' Association.

The winning letters will be read and prizes awarded at the meeting. Letters must be in the hands of W. E. Friedrich, 1105 Bristow St., Belleville, Illinois, before June 1.

— 0 —

#### New Idea for Wisconsin District Beekeepers' Meetings

Twenty practical questions on beekeeping, submitted by leading beekeepers will constitute the program for three district beekeepers' meetings held under the auspices of the Wisconsin State Beekeepers' Association.

Meetings will be held as follows:

April 3—Southeastern Wisconsin District Association, Racine County Agricultural School, Rochester, Wis.

April 6—Fox River Valley District Association, City Hall, Appleton.

April 8—Western Wisconsin District Association at Chippewa Falls.

In addition to Prof. H. F. Wilson, Mr. C. D. Adams, and Mr. H. J. Rahmlow of Madison, officers of the State and District Associations and leading beekeepers will be on hand to help answer the questions. This program is arousing considerable interest among beekeepers.

— 0 —

#### April County Meetings in Indiana

April 3, Shelby County, Shelbyville, 1:30 p. m.; April 4, Decatur County, Greensburg, 1:30 p. m.; April 6, Floyd County, New Albany, 1:30 p. m.; April 7, Harrison County, Corydon, 1:30 p. m.; April 8, Scott County, Scottsburg, 10:00 a. m.; April 8, Jennings County, North Vernon, 2:00 p. m.; April 9, Jeffer-

#### MOTT'S NORTHERN BRED ITALIANS

Eliminates that swarm nuisance. Free list.

Guaranteed purely mated.

April, May: \$1.00; 3, \$2.50; 6, \$4.75; 12, \$9.50. June, July: \$1.00; 2 or more, 75c ea.; 50, \$35.00; 100, \$65.00. Fair to good breeders, \$2.00, \$3.00, \$5.00. Virgins, 40c. Satisfaction guaranteed.

E. E. MOTT :: GLENWOOD, MICH.

#### IT WILL PAY YOU

To get the wax working and foundation prices on

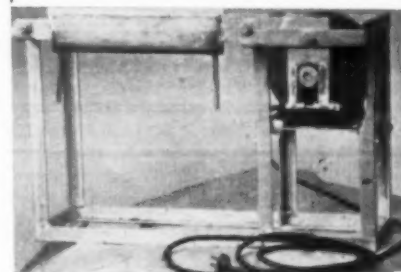
### SCHMIDT'S ECONOMY FOUNDATION

Weed process. Satisfaction or money back.

Oscar H. Schmidt, Rt. 4, Bay City, Mich.

**PACKAGE BEES AND QUEENS**—Our bright Italians are good honey gatherers. Owing to our special breeding method they swarm less, they build up fast, we ship promptly and use light cages, no disease ever been in our country. 2-lb. pkg. bees, to June 1, \$2.45; after June 1, \$1.95. 3-lb. pkg. bees, to June 1, \$3.15; after June 1, \$2.55. Untested bright Italian queens, to June 1, 75c; after June 1, 50c. Safe arrival, satisfaction guaranteed. TAYLOR APIARIES :: Luverne, Alabama.

### Barnes' Uncapping Machine



Does not injure combs. Uncaps even and clean. Precision built to last a lifetime. Steam jacketed knife; electric or other power drive. Built on new principle different from others.

Price \$47.00 complete with motor

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## PACKAGES QUEENS

Wire us your rush orders. We can fill them, one or one thousand. Baugh Stone, one of the oldest and most experienced shippers of bees, will have charge of all package shipments. Each package will be headed with young queens reared by me personally. Prompt shipment. Low express rate. Guaranteed satisfaction in every way. Send us an order, we will please you.

15% discount to dealers.

**O. D. RIVERS**  
POWDERLY, TEXAS

Are Your Friends Subscribers to America's Oldest Bee Journal?

Successor  
to the late  
**JOHN M. DAVIS**

## TENNESSEE BRED QUEENS

### THREE BAND PURE ITALIANS

Utility, Beauty, Satisfaction, Disposition, Prolificacy,  
Production.

Untested, 75c; Select Untested, \$1.00; Select Tested, \$2.00  
Tested Breeders, \$4.00

Booking orders for May 15th delivery.—24 hour service.—Clipping Free.

## SMITH APIARIES

WALLACE R. SMITH

SPRING HILL, TENN.

## A COMPLETE SERVICE FOR BEEKEEPERS

Manufacturers Comb Founda-  
tion—Hives and Frames

Our comb foundation is made  
from pure beeswax on an ex-  
change basis or for cash. . .  
Our hives and frames are made  
from soft Oregon pine and are  
accurately milled to standard  
dimensions.



Beekeepers' Supplies—Honey  
Containers—Package Bees  
and Queens

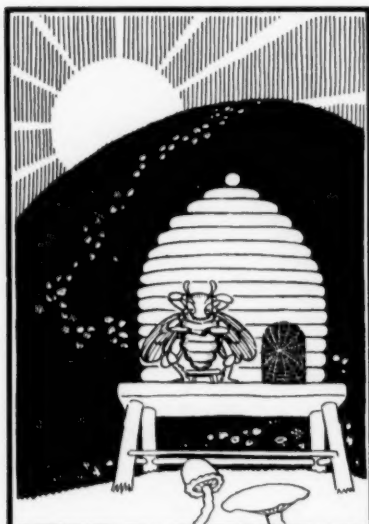
28 years in the manufacturing  
business has thoroughly ac-  
quainted us with beekeepers'  
needs and problems. We give  
personal attention to every  
order sent to us.

WRITE FOR 1936 CATALOG

**WILLIAMS BROS. MFG. CO.**

5205 S. E. 82nd Avenue

PORTLAND, OREGON



**THE BEE THAT  
GETS THE HONEY  
DOESN'T HANG  
AROUND THE HIVE**

## BASSETT'S ITALIAN Queens and Package Bees

### THREE BANDED STOCK

Will you be ready for the coming season?  
WE ARE READY to furnish you with bees  
that do not loaf or hang around the hive—  
bees that will show you a profit and are pleas-  
ant to work with.

Our cages are light and dependable. We are  
located in the northern part of California on  
main line railroad. Lower express rates, fast  
trains, fewer transfers enable us to give you  
a real service on package bees.

We do not take on more orders than we can  
give good service on, and we ship when we  
say we will. We guarantee everything we ship  
and are better prepared now than ever before  
to give you a satisfactory service.

The Marketing AGREEMENT IS YOUR PRO-  
TECTION AS WELL AS OURS. Its meaning  
is to build a higher standard for our industry.  
Let us unite in our efforts to maintain this  
standard for our mutual gain.

Predictions are that the demand will be  
double the supply, so do not delay—place your  
order NOW for an early shipping date.

### PRICES TO JUNE 1

Two-pound package with young laying queen,  
\$2.45; three-pound package with young laying  
queen, \$3.15. Express collect. Less 15% to  
dealers.

Select young Italian queens, \$1.00; two or  
more, 75 cents each, prepaid. Certificate of  
health furnished.

Orders booked with 10 per cent deposit, bal-  
ance before shipment. Write for package bee  
instructions and shipping rates.

## IXL APIARIES

C. BASSETT, Prop.

SUTTER, CALIFORNIA.

Phone or Telegraph 91-Y-21,  
(Marysville Exchange)

(Member California Bee Breeders' Association)

son County, Madison, 1:30 p. m.;  
April 10, Switzerland County, Vevay,  
1:30 p. m.; April 11, Dearborn and  
Ohio Counties, Aurora, 1:30 p.m.;  
April 13, Rush County, Rushville,  
1:30 p. m.; April 14, Fayette County,  
Connersville, 1:30 p. m.; April 15,  
Wayne County, Richmond, 1:30 p.m.;  
April 16, Union County, Liberty,  
1:30 p. m.; April 21, Blackford Coun-  
ty, Brookville, 1:30 p. m.; April 18,  
Ripley County, Osgood, 1:30 p. m.;  
April 20, Wells County, Bluffton,  
1:30 p. m.; April 21, Blacford Coun-  
ty, Hartford City, 1:30 p. m.; April  
22, Johnson County, Franklin, 1:30  
p. m.; April 23, Tipton County, Tip-  
ton, 1:30 p. m.

—ABJ—

## Transportation of Bees and Beekeeping Equipment Across Kansas

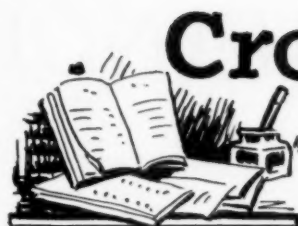
The apiary inspection law of Kan-  
sas states that all bees and beekeep-  
ing equipment transported into the  
state of Kansas must be accompanied  
by a recognized certificate of apiary  
inspection. At the same time a copy  
of this certificate should be sent to  
Geo. W. Kinkead, Secretary of the  
Kansas Entomological Commission,  
State House, Topeka, Kansas, and  
also a copy to R. L. Parker, State  
Apiarist, Department of Entomology,  
Kansas State College, Manhattan,  
Kansas.

The state of Kansas has in opera-  
tion, ports of entry which require all  
drivers of trucks to stop and declare  
their loads going into and going out  
of Kansas. If loads of package bees  
or colonies of bees are in good order,  
accompanied by a certificate of api-  
ary inspection, there is no trouble in  
crossing the state of Kansas. Pack-  
age bees have been held up at the  
ports of entry in Kansas due to the  
fact that the shipments have not been  
accompanied by a certificate of apiary  
inspection which states the point of  
origin and point of destination.

I suggest that all package bee shi-  
ppers of the South and commer-  
cial beekeepers in northern United  
States and Canada, who are trucking  
package bees through Kansas, have  
their shipments in order, or accom-  
panied by a recognized certificate of  
apiary inspection, before entering  
Kansas. When the conditions, as  
stated above, are complied with,  
there is no difficulty in crossing the  
state of Kansas, except to pay the  
transportation tax on ton miles. If  
further information is wanted in re-  
gard to this latter point, I suggest to  
those who are interested write to the  
Corporation Commission, State  
House, Topeka, Kansas.

R. L. Parker,  
State Apiarist.





# Crop and Market Report

COMPILED BY M.G. DADANT



For our April crop and market page, we asked reporters to answer the following questions:

1. Winter losses in bees?
2. Condition of bees?
3. Honey plant prospects and moisture?
4. How much honey left?

## Winter Losses

Without a doubt the winter losses this year throughout the United States are going to be heavier than they have been for several years in the past. This, of course, is due to the extremely cold weather and its long duration throughout the northern states. The entire southern half of the country has come out in remarkably good shape with very few losses of bees although conditions are somewhat later than usual owing to the delay in the arrival of spring through the cold spell.

Reports from the northern states are very conflicting. In many instances bees were quickly buried in snowdrifts and these fared far better than colonies which were exposed to the wind even though properly packed. The difficulty came through exposure over a long period so that the colony was not able to move its cluster over to the honey and then the entire colony starved with plenty of honey in the hive. The duration of the cold spell without flight also has its effect upon the bee cluster and the writer believes we will find quite a lot of spring dwindling this year through a small cluster and inability to cover the brood which the queen may lay so as to give the colony strength.

Generally, we would say that the better beekeepers who had their hives properly packed or in cellars are going to come out in good shape and most of them are going to make up their losses with package bees. Many of these beekeepers got out the first warm spell and made sure that the entrances of the hives were dug out even to the depth of three or four feet of snow in order that ice might not cover the entrance and seal the hives tight, thus smothering the bees.

The farmer beekeeper in most instances is going to suffer very badly throughout all of the northern areas and we would judge that losses will run as high as 50 to 60 per cent among the farmer beekeepers and even as high as 25 per cent in the more experienced. Many reports we have coming in, however, from commercial beekeepers would indicate that their losses when wintered outdoors will not run over 10 to 15 per cent and the cellar wintered bees although not out of cellars at the time this is written, apparently are in a satisfactory condition though getting restless and anxious to be out.

## Condition of Bees

In the southern states, bees are in excellent condition and building up very rapidly although the season is from one to three weeks late owing to a delay in the arrival of warm weather. However, every indication seems to point to the fact that the package shippers and queen breeders are going to be in excellent condition unless we have more of the cold backward weather. In the extreme southern states on March 10, bees already had five to eight frames of brood and building up rapidly with the earlier plants in flower.

In southern California, bees are apparently ahead of their usual condition and swarming was reported as early as March 15. Throughout the northern states, those colonies which have survived are probably in average condition with likely more than the usual amount of weakening of colonies and the possibility of spring dwindling. Also we believe the reports show a little more than average number of colonies suffering from queenlessness and drone layers. Bear in mind that this report is being written at a time when many thousands of colonies in the

extreme north sections of the country are still buried in snowdrifts and many thousands of others still in cellars so that a definite conclusion on the condition of bees cannot be given at this time.

## Honey Plant Prospects

As disheartening as is the general condition of bees throughout the country, we find exactly the opposite when it comes to honey plant prospects. Deep snows have covered the entire country and there have been either snows or rains clear to the Gulf coast so that practically all sections of the country are very well satisfied with the condition of honey plants. Early rains last fall put the clovers in excellent condition and the snows have not only retained this moisture but have melted so as to soak the water thoroughly into the ground. We would say that the white clover region this year is especially blessed and that prospects are unusually good. This extends into the sweet clover section.

We find an area of heavy drought in the western plains section starting in western South Dakota and extending down through into western Texas.

Also conditions have not been satisfactory in southern California. There have been ample rains now but the rains came late and the result is that many of the desert honey plants are not in satisfactory condition to produce heavy flowering and honey production. It would appear as though the southern California crop will probably not be up to last year but in the central and northern sections, conditions are excellent.

In fact we do not know a season when conditions have been so propitious the entire country over including Canada as this year, for honey plants. If proper weather comes during the honey producing season, it looks like there should be bounteous nectar.

## Honey Left

Practically all reports are to the effect that there is only from 5 to 10 per cent of the honey crop left in the hands of producers and most of this is held in strong hands. Occasionally a report comes in that a producer has quite a lot of his honey left but it is usually because he wants to obtain a little more satisfactory price for it and is holding for the tail end of the market. One exception is perhaps that the Central West reports a rather more than average amount of amber fall honeys still left on hand. The market for the amber fall has not been quite as good as usual probably owing to the fact that last year's fall honey was somewhat stronger and unless mixed is not as satisfactory for baking purposes.

California honey is practically all cleaned up as is that throughout the southern areas of Texas, Arizona and New Mexico, as well as the Southeast. White honeys of the North have been practically cleaned up for some time.

## Summary

All in all, it is going to take a good honey season this year to recoup the losses that were made during the winter just past. However, it is remarkable how rapidly bees will come forward in the spring and remarkable also how many swarms can be gotten out of a few colonies of bees. Apparently the people who generally lose heaviest are those who will let their bees swarm so no doubt with a satisfactory prospect ahead, the old hives will be refilled with new swarms early in the coming season if conditions go as per schedule.

We believe that practically all of the commercial beekeepers are determined to recoup any losses and perhaps make increase through package bees this year. Package shippers report the heaviest demand in many years and we believe that it will increase still more when beekeepers are able to get to their bees in the northern section and find out just how many colonies they need.

# **The BEEKEEPER'S EXCHANGE**

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

## **BEEES AND QUEENS**

**ITALIAN Queens.** Northern bred, for Northern conditions.

Eugene Gordon, Hershey, Nebraska.

**THREE-BANDED Italian bees and queens** for 1936. Write for prices. Alamance Bee Company, Geo. Elmo Curtis, Mgr., Graham, North Carolina.

**TRY PETERMAN'S Italian queens and package bees;** 19 years in the business; good quality, prompt service. We can please you. Code prices; discount to dealers.

H. Peterman, Lathrop, Calif.

**CARNIOLAN & ITALIAN BEES & QUEENS**—Tested \$1.50, untested 75c. Write for prices on bees.

Mrs. C. B. Bankston, Buffalo, Texas.

**CAUCASIANS**—Young laying queens 75c. Millers Caucasian Apiaries, Whitsett, Texas.

**THREE-BANDED ITALIAN bees and queens.**

There is money in package bees when you buy right. We can make early shipments on two and three-pound packages of bees with queens; ship at any time you say, March, April, May and June. 500 one-story colonies of bees in modern ten-frame standard equipment at \$3.50 each. Truck them yourself; we are located on paved highway. Health certificate with all bees.

Little River Apiaries, Box 83, Gause, Texas.

**BOOKING ORDERS for Packages of Italian Bees and Queens at Agreement prices.** Better order early; big losses all over the South. N. S. Gladish, No. 5 Hobbs Rd., Nashville, Tenn.

**PACKAGE BEES SPECIAL**—Italian bees with pure Caucasian queen, 2-lb. pkg. \$2.45; 3-lb. pkg. \$3.15; 5-lb. pkg. \$4.55 Express collect. Caucasian queens 75 cents each. Safe arrival and satisfaction.

Tillery Brothers, Greenville, Alabama.

**BEST MOUNTAIN GRAY Caucasian bees and queens.** Select queens 75c each; 2-pound package with queen \$2.45; 3-pound package with queen \$3.15. Full weight, safe arrival guaranteed. Book order now to reserve your shipping date.

P. B. Skinner Bee Co., Greenville, Ala.

**QUEENS**—You have tried others, now let us solve your queenbee problem. Our own Italian strain the result of 20 years of select breeding. First shipment of this season's queens about March 10th. Price to June 1st for guaranteed, select untested queens, 75 cents each, any quantity. Usual 15% discount to dealers.

Edson Apiaries, Gridley, Calif., Butte Co.

**WANT TO SELL 600 combless packages** with Italian queens. One hundred on each date as follows: April 20th, 25th, 30th; May 5th, 10th, and 15th.

Elevation Apiaries, Milano, Texas.

**WE OFFER FOR 1936 the same bright yellow Italian queens,** as good as any you can buy. Under marketing agreement 75 cents each, any number you buy. Satisfaction guaranteed in U. S. and Canada. E. A. Simmons Apiaries, Powell Owen, Mgr., Greenville, Alabama.

**PACKAGE BEES,** code prices. Order early. W. L. Ritter, Rt. 1, Hampshire, Illinois.

**SILVER RUN QUEENS**—We offer queens from the best three-banded stock we can breed or buy. Cells built in mammoth colonies. Queens mated from strong nuclei. Each queen carefully inspected before shipment. We have reared thousands of queens that have given satisfaction throughout United States and Canada, working for up-to-date southern queen and package shippers. Write for special price on number of queens you need. Our motto: Each queen an advertisement for SILVER RUN APIARIES, Route 1, Phenix City, Alabama.

**GOLDEN ITALIAN QUEENS,** Untested 75c each, May delivery. Tested \$1.50, Select Tested \$2.50.

Sam Hinshaw & Son, Randleman, N. C.

**EXTRA YELLOW Italian Queens** that produce bees a little more yellow than the three-banded; more gentle and just as good workers. Untested 75c each, starting early in May. Health certificate and satisfaction. Hazel V. Bonkemeyer, Rt. 2, Randleman, N.C.

**GOLDEN PURE ITALIAN QUEENS** that produce workers very gentle to handle; good honey gatherers. I have never had any foulbrood in my apiary. Satisfaction guaranteed. 30 years a breeder. Tested \$1.50, select tested \$2.00; these ready now. Untested about May, 75c.

D. T. Gaster, Rt. 2, Randleman, N. C.

**QUEENS OF QUALITY.** Package Bees. Nothing but young bees. Full weight at your end of the line. Bees forwarded on date specified in your order. I have been a producer of honey for many years, as well as a shipper of bees. Give me a trial.

O. P. Hendrix, West Point, Mississippi.

**JOYFUL QUEENS**—Leather colored Italians. Good honey gatherers and gentle. 75c each.

Joy Apiaries, Walter Friedrich, Belleville, Ill.

**PACKAGE BEES WITH QUEEN INTRODUCED** eliminates loss of queens. Our folder tells about them.

A. O. Smith, Mount Vernon, Indiana.

**PLAY SAFE**—Investigate my safety payment plan; it will assure you of your packages when you want them. Don't be disappointed; be sure of getting your packages on the dates you want them. I get no pay until after bees are shipped. Everybody looks for rush business this spring; be sure of getting your packages in time to make a honey crop. Write me for full particulars and play safe. Three-banded Italian Bees and Queens since 1920. Satisfaction guaranteed.

A. W. Nations, Donna, Texas.

**CAUCASIAN BEES AND QUEENS for May.** Write for free booklet which describes our bees and quotes prices.

Bolling Bee Co., Bolling, Alabama.

**"SHE-SUITS-ME"** line-bred Italians, season 1936. One untested queen \$1, six queens \$5. Ready May 20.

Allen Latham, Norwichtown, Connecticut.

**TWO-FRAME NUCLEUS Italian bees,** brood and honey with select Italian queen, \$2.85 for April-May. Young laying queen only 75c.

Victor Prevot, Beekeepers, Mansure, La.

## **HONEY FOR SALE**

**FOR SALE**—Northern white extracted and comb honey.

M. W. Cousineau, Moorhead, Minn.

**CHOICE Michigan Clover Honey.** New 60's.

David Running, Filion, Michigan.

**HONEY FOR SALE**—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

**FOR SALE**—Well ripened clover honey, car lot or local shipments. Will be pleased to submit sample. **THE COLORADO HONEY PRODUCERS' ASSN.,** 1424 Market St., Denver, Colorado.

**FANCY CLOVER and fall honey.**

Kalona Honey Co., Kalona, Iowa.

**A CAR of sweet clover honey.**

George Seastream, Moorhead, Minn.

**WE OFFER white and amber extracted honey in pails or 60-lb. cans; also comb honey.** Reasonable prices. A. I. Root Co., 224 West Huron St., Chicago, Ill.

**FOR SALE**—Fine grade light amber bulk comb honey.

Hyde Bros., New Canton, Ill.

**HONEY PACKERS**—Write us for prices and samples on California and Western honeys. We stock all varieties. **HAMILTON & COMPANY,** 108 West Sixth Street, Los Angeles, California.

**CLOVER HONEY,** new tins.

F. O'Donnell, Rush City, Minnesota.

**250—5-lb. pails clover, heartsease, buckwheat blend honey, 7c.**

Clyde Wilde, Oregon, Illinois.

**FOR SALE**—Extracted honey in new 60's. H. Blitz, P.O. Box 3438, Philadelphia, Pennsylvania.

## **HONEY AND BEESWAX WANTED**

**WANTED**—Extracted Honey. Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

**WANTED**—Capping melter or dark grade honey. Edw. Klein, Gurnee, Ill.

**WANTED**—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

**WANTED**—White and Light Amber Honey. Carlots or less. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

**SPOT CASH PAID FOR COMB AND EXTRACTED HONEY.** Send samples and best price.

C. W. Aeppler Company, Oconomowoc, Wis.

## **WANTED**

**WANTED**—Clean active young man for work in my Michigan apiaries. Give age, weight, height, experience if any and wages expected, in first letter.

David Running, Filion, Michigan.

**WANTED**—Experienced help. Give qualifications and wages desired with room and board furnished. References required.

A. J. Schultz, Ripon, Wisconsin.

**WANTED**—Experienced man to help with nine hundred colonies, extracted honey. Give full particulars, wages expected.

Ernest Sires, Stanfield, Oregon.

**WANTED**—Ten to twenty-five swarms of bees with three extra supers each or equipment for the above mentioned. George Anderson, 3817 West Kilburn, Milwaukee, Wisconsin.

**MAN THOROUGHLY FAMILIAR** with extracted honey production to manage 600 colonies. Must know his stuff.

R. H. Walstrom Apiaries, Omaha, Nebraska.

**WANTED**—Party to run bees on shares with chance of buying bees and location. Northern beekeeper preferred. Box Wis., in care American Bee Journal.

**WANTED**—Bees within a 600 mile radius of Ohio for 700 colonies, 10-fr. equipment, excellent condition, all or part. Now in orange flow. Made 43 tons last year.

150 S. Sierra Madre Ave., Sierra Madre, Cal.

## **FOR EXCHANGE**

**NEW BEE SUPPLIES** for honey or bees and queens. Dillon & Sons, Adrian, Michigan.

**EXCHANGE for Package Bees**—Oliver Typewriter No. 9 (good). Excelsograph Duplicator (like new).

Alvin Coover, Masonville, Iowa.

## **FOR SALE**

**200 COLONIES,** disease free, full equipment. Best honey section of British Columbia. Box 11, Ashcroft, Canada.



# Honor Roll



## EXPLANATIONS ON THE HONOR ROLL—

Honor Roll covers memberships received during the period of January 1, 1935 and December 31, 1935.

\*Indicates those members received through the Free Queen Offer made by the Stover Apiaries, Mayhew, Mississippi.

### Florida (continued)

\$100 of this amount was realized from the sale of honey and beeswax displayed at the Tampa Fair and contributed by the following persons:

Bonas, Mack	Pine Castle
Booth, J. H.	Labelle
Darby, M. E.	Zephyrhills
DeLong, S. E.	Zephyrhills
Dewey, Lynn M.	Orsino
Forchand, N.	DeLand
Foster, R. E.	Gainesville
Goering, W. A.	Moore Haven
Haldane, Mr.	Leesburg
Homolka, J. J.	Brownsville
Horton, Waldo	Winter Haven
Hutchingson, J. V.	Dade City
House & Haynes	Dunedin
Lewis, L. M.	Havana
Lundin, A. C.	Tampa
Mack, Charles	Sharpes
Maddox Commission Co.,	Bainbridge, Georgia
Nesbit, William	Sumatra
Nordman, J. B.	DeLand
Novel Farms	Maitland
Ochs, Chester H.	Largo
Padgett, J. T.	Port Tampa City
Pering, Alfred	Dade City
Stowe, Howard	Ft. Pierce
Struthers, Harold	Winter Haven
Tussey, Harry	Alva
Tietsema, Tim	Oviedo
Whitfield Citrus Corp.	Bradenton
Williams, Harry	Citrus Center

### Georgia

Ferebee, L. L., Tybee	\$ 1.00
Heard, A. Judson, 267 Oxford Pl., Atlanta	2.00
Howell, D. W., Shellman	1.00
Jackson, D. C., Funston	5.00
Maddox Commission Co., Bainbridge	2.00
Puett, G. G., Bahira	11.00
Spence, J. R., Camilla	2.00
York Bee Company, Jessup	100.00

### Idaho

Beach, Frank, Burley	\$ 3.00
Boggs, Richard, Twin Falls	1.00
Bowen, H. R., Roberts	6.00
Bradshaw & Sons, R. D., Wendell	18.00
Brannen, D. C., Buhl	1.00
Browning, Lee, Rexburg	3.00
Budge, Lawrence, Malad City	5.00
Cox, O. S., Shelley	3.00
Ensley, R. W., Aberdeen	6.00
Epstein, J., Idaho	25.00
Farnsworth, N. F., Bliss	6.00
Fowler, H. C., Rexburg	3.00
Gault, Clyde, Route 4, Buhl	3.00
Gibson, William T., Rexburg	6.00
Gould, George O., Buhl	3.00
Hanson, Lee, Rigby	3.00
Hurat, C. M., Blackfoot	9.00
Jones, F. C., Route 1, Idaho Falls	4.25
Keck, H. H., Paul	3.00
Kingsford Honey Co. (Miss Diantha Kingsford), Grace	8.00
Koger, G. A., Meridian	6.30
Liebert, W. E., St. Anthony	5.00
Lockie, J. J., Shoshone	6.00
Martin, J. F., Filer	3.00
Meyer Bros. Honey Co., Rigby	12.00
Miller, Earl J., Blackfoot	18.00
Miller, Robert E., Twin Falls	7.00
Mitchell, Wm. W., Shelley	6.00
Mobley, Grover, Rigby	18.00
Mobley, Roy, Rigby	3.00
Nealey, Sam P., Sterling	3.00
Nelson, E. M., Blackfoot	9.00
Newberry, Harry, Filer	3.00
Powers, Irvin F., Parma	30.00
Randall, Lloyd F., 235 Eye Street, Idaho Falls	5.00
Redfield, J. H., Superior Honey Co., Idaho Falls	5.00
Robertson, H. A., Buhl	1.00
Roscoe, C. B., Rigby	3.00
Sarff, Arthur, Pocatello	1.00
Schreiber, Earl, Gooding	9.00
Shively, William, Buhl	1.00
Simmons, J., Parma	6.00
Shore, Arthur, Blackfoot	6.00
Smart, W. N., Rexburg	6.00
Sohn, Roy, Burley	3.00
Stahlman, D. C., Buhl	3.00
Stewart Bros., Jerome	6.00
Stoneman, J. H., Blackfoot	3.00
Weber, H. B., Blackfoot	6.00
Williams, Charles A., Meridian	10.00
Wilson, Roy, Wendell	3.00

### Illinois

Adam, Edward, Strawn	\$22.00
American Honey Producers' League, Champaign	25.00
Anderson, C. J., Route 2, Box 9, Morris	11.70
Augenstein, A. A., Route 1, Dakota	1.00
Bellin, Antonio, Nokomis	1.00
Bender, Carl, Forest	3.00
Bodenschatz, Adam, 610 Porter St., Lemont	3.00
Bryan, H. J., Normal	1.00
Burdzilauskas, Joe, Pana	1.00
Cale, G. H., Hamilton	10.00
Clough, Arthur, Donnellson	1.00
Dadant, Henry, Hamilton	25.00
Dadant, L. C., Hamilton	25.00
Dadant, M. G., Hamilton	25.00
Davis, Palmer, Homer	1.00
*Dean, C. K., Cordova	1.00
Denhart, Herman, St. Joseph	1.00
Doermann, W. T., 2554 W. Grove St., Blue Island	1.00
Donnell, Carson, Donnellson	1.00
Duax, Mrs. Irene, 3414 S. Western Ave., Chicago	1.00
Duckwall, W. G., Jacksonville	3.60
Duerrstein, C. W., Galena	1.00
Faist, John, 30 E. Jefferson, Freeport	2.00
Fischer, Benj. H., Route 1, Roanoke	4.50
Fisher, Lawrence, Woodson	3.60
Foot, Harvey, Green Valley	1.00
Frederick, Brother, St. Mary's Mission, Techy	5.00
Frymier, H. G., Carbon Cliff	1.00
Funkhouser, Ora Lee, Eldorado	1.00
Gober, R. M., 417 Mix St., Oregon	1.00
Graham, Grant, 1110 Marshall St., Hillsboro	1.00
*Hassler, William M., Route 5, Princeton	1.00
Holm, C., Genoa	6.00
Holmes, A. L., Jacksonville	3.60
Johnson, Alfred, Rankin	3.90
Jonkman & Oosting, Evergreen Park	1.00
Kellar, P. C., 2105 N. Cedar Rd., Homewood	1.00
Kirk, Wm. S., Farmersville	1.00
Krebs, Phillip, Marissa	1.00
Knoepfel, Henry, Bluffs	.50
LaSalle Bureau Co., Bkrs. Assn., LaSalle	2.00
Laughlin, Harold, Butler	1.00
Lefler, Harry, Hamilton	3.60
Lynn, George W., Lockport	2.00
Matthew, O. R., Virginia	4.00
Meier, Edward, Bluffs	3.60
Meineke, E. A., Arlington Heights	5.00
Milum, Dr. V. G., Champaign	5.10
Olson, C. A., Route 2, Edgewood & 48th, LaGrange	.50
Osborn, Wesley, Hillsboro	6.00
Peifer, Vincent, Lincoln	1.00
Peoria Co. Bee Assn. (S. B. Moon, Treas.), 605 Machin St., Peoria	5.00
Peterson, Ernest W., Sandwich	2.00
Porter, Marion J., Pittsfield	2.00
Rankin, R. E., Payson	1.00
Rector, L. W., 12944 S. Calif. Ave., Blue Island	.50
*Retzinger, Leo, Happ Road, Northbrook	1.00
Rife, C. F., 810 Chicago Ave., Naperville	1.00
Rocke, Raymond, Morton	1.00
Rocke, Virgil E., Eureka	1.00
Rogers, H. S., 8952 Blackstone Ave., Chicago	2.00
St. Claire Co. Assn. (O. G. Rawson), 3208 Forest Place, E. St. Louis	5.00
Simmer, Eleanor N., 9607 Beverly Ave., Chicago	1.00
Skinner, John, Albion	1.00
Strieder, Mr. and Mrs. C. G., Brimfield	1.50
Tri County Bee Assn. (W. Koritz), Buckley	2.50
Weed, George H., Lanark	2.00
Whiting, Ivan, Route 9, Rockford	1.30
Wicklein, P. A., Percy	2.00
Woody, E. C., 1314 W. 31st St., Chicago	1.00
Zadel, Frank, Witt	1.00

Zink, Arthur O., 2906 Kilbourn, Chicago

1.00

### Indiana

Alcornholm Apiary, Needham	\$ 1.00
Blinn, Samuel, Marion	1.00
Brenneman, Alfred, Marion	1.00
Brenneman, Frederick, Berne	1.00
Brenneman, Moody, Berne	1.00
*Bridges, R. R., 547 N. Beville Ave., Indianapolis	1.00
Cain, Geo. F., Marion	1.00
Clay County Beekeepers Association	2.20
Conrad, C. Sheldon, 237 Burnam St., Kendallville	1.00
Davis, Charles, Herbat	1.00
Detamore, Byron, Marion	1.00
Fasick, Leland B., Rt. 1, Box 226, Richmond	2.00
Hook, Lewis C., Albany	1.00
Johnson, T. C., Rt. 2, Logansport	1.00
Kemper, Lon, Greentown	1.00
King, Harry B., Marion	1.00
Kline, Ray L., Roann	1.00
Koutny, James, Sumava Resorts	1.00
Kubachi, Rev. John, Walkerton	1.00
Little, Guy S., 326 E. 12th St., Connersville	1.00
Macdonald, J. Lake, Rt. 3, Box 207, Marion	5.00
McRobert, Archie, Marion	1.00
Miller, E. S., Valparaiso	5.00
Moore, David, 3640 S. Boots St., Marion	1.00
Morrison, C. J., 1235 Lincoln Way, So. Bend	3.00
Renbarger, Omer C., Rt. 1, Marion	2.00
Riddle, Grant E., Lakeville	2.25
C. M. Scott Company (A. G. Thomas), Indianapolis	2.00
Starkey, James E., State Library Bldg., Indianapolis	1.00
Starrett, W. H. (A. I. Root Co.), Indianapolis	1.00
Stewart, L. R., Newport	2.00
Vigo Co. Woman's Auxiliary, Mrs. Wm. Pogue, St. Marys-of-the-Woods	2.20
Vigo Co. Beekeepers' Association, Wm. Pogue, St. Marys-of-the-Woods	2.20
*Wabash Valley Beekeepers Roundup	15.20
*Wade, Murray W., 310 Sunny-side Ave., Aurora	1.00
Weber, William M., Rt. 2, Huntington	2.00

\*Result of queens given by Mr. H. McConnell of Robinson, Illinois.

### Iowa

Brown, E. G., Sergeant Bluffs	\$ 2.00
Ewell, E. W., 1020 W. 65th, Des Moines	2.10
Gartner, L. G., Titonka	6.00
Haag, C. G., Alton	5.00
Hadenfeldt, Bernhard, 3008 N. Gaines St., Davenport	1.00
Hansen, Chas., Newell	1.00
Harnack, Wilbur, McGregor	2.00
*Hermann, Jos. Manchester	1.00
Jessup, John G., Council Bluffs	10.00
Johnson, John A., Pomeroy	2.00
Jones, Raymond, Clarion	5.00
Joyce, Russell, Springville	1.00
Keil, J. E. & Son, Titonka	8.40
Littlefield, Roy, Exira	15.00
Lyle, Newman I., Sheldon	15.00
Mann, W. P., Thurman	10.00
Massure, Harry, Redfield	1.30
Menter, Dewey, Ida Grove	1.00
Miller, Ralph C., Russell	1.00
Myers, L. E., Ida Grove	3.29
Paddock, F. B., Ames	5.00
Peeper, Mrs. Don, Arlington	1.00
Polhemus, Geo., Ames	3.00
Robinson, Earl C., 301 5th Ave., Oelwein	1.00
Schatz, George P., 119 State, West Union	1.00
Sherman, R. C., Tracy	2.00
Stine, J. W., Rt. 4, Burlington	1.00
Stoughton, John, Cherokee	7.00

This Honor Roll occupies several pages and will be continued in the May number. If your state is not included above, therefore, look for it in March or later issues. If any name is misspelled or if any name is omitted, please write at once to either the American Bee Journal or to American Honey Institute, Madison, Wisconsin.

THIS SPACE CONTRIBUTED BY DADANT & SONS, HAMILTON, ILL.



# The Postscript

GOSSIP ABOUT THE OFFICE  
IN THE MAKING OF THE MAGAZINE



Letters continue to come to me asking for seed of the blue flowered sweet clover (*Trigonella*), but we have none. Our small supply came from France and was all distributed in small samples last spring. A number of our correspondents have saved seed from this and will try again next spring. A few have reported favorably as noted on this page in previous issues.

—ABJ—

A letter from L. N. McLean, of Richfield Springs, New York, reached me in South Texas on February 14. I was in my shirt sleeves with an outdoor temperature of about eighty degrees. This letter told of the fifth week of steady zero temperature with his apiary covered with from two to five feet of snow. The deep snow probably insured the safe wintering of the bees when otherwise they would die. The letter emphasized the great difference in climate between the northern and southern states.

—ABJ—

Since so much has been done to advance the season for plants through the use of artificial heat, I cannot but wonder whether it would not be possible to keep the beehives warm in the uncertain weather of early spring by means of small electrical heating units. When the cold spells compel the bees to cluster they lose many eggs and much young brood which greatly retards their development. To get strong colonies in time for fruit bloom and other early sources would be worth some extra effort.

—ABJ—

It looks to me like insulation in winter is more important in the mild climate of south Texas where there is seldom a frost, than in Colorado where the honey crop does not come until midsummer. In the Rio Grande Valley of Texas, honeyflows come in mid-winter from pink-mint, from broccoli and from citrus. The best honeyflows of the year are often lost because of insufficient bees to harvest the crop. Winter protection should pay in such a locality.

—ABJ—

E. G. Brown, of Sargeant Bluff, former president of the Iowa Beekeepers' Association, writes that the past winter is one likely to prove that there is some advantage in cellar wintering. He also suggests that while we are working on disease resistance it might be well to try for some cold resistance along with it. When he wrote the temperature was 23 below zero with a heavy snow. At the same time a letter from our son, Kent, said that a temperature of zero seemed almost like spring in comparison to what they had been getting. Iowa had a real old-fashioned winter this time.

—ABJ—

L. R. Robson, of Saskatoon, Saskatchewan, also wrote early in February to say that with temperatures thirty degrees below zero or colder forty-seven beekeepers registered for a short course. It takes some enthusiasm to get out for any kind of lectures in that kind of weather. Saskatoon is one of the places where the blue flowered sweet clover has made a good showing. Seed probably can be secured either from Mr. Robson or from the University by those who wish to give it a trial.

—ABJ—

Those letters reached me in the Rio Grande Valley of Texas where just then the bees were busy gathering honey from Stachys and from broccoli. Although the broccoli was cut for market the stalks left standing continued to bloom and there was a good honeyflow from it in some places. Had the bees been strong considerable surplus might have been stored. Even in that mild climate the bees are poorly prepared for a winter honeyflow and most of it is used to build up for later crops.

—ABJ—

Ivan Gunter, of North Dakota, appears to be the first flying beekeeper. He has bought a new plane and will be in position to make frequent trips between his Dakota

apiaries and his Texas citrus grove. Good for Gunter. Probably we will all be getting planes before many years. It doesn't seem so long since the first beemen to buy autos attracted a lot of notice.

—ABJ—

One of the most favorable reports of blue flowered sweet clover comes from Glen Fosnaugh, of Lacombe, Alberta. He says: "As a forage crop, we would say this clover looks promising. Horses and cattle both seem very fond of it when cured, it smells very fragrant and pleasant. It is not the least bit bitter. The bees could usually be found on the blue blossoms at the same time the white blossoms were being worked and probably they were removing such nectar as was available from the small planting."

—ABJ—

Through the kindness of C. E. Hurd, Texas Bee Inspector, I secured two fine nests of the honey making wasps and hung them up beside the insectary at the Texas Sub-station at Weslaco. When the nectar gatherers come from the field with a load of honey they pass around from one to another of those remaining at the nest, dividing their spoil in much the same way that honey bees do. In fact these insects have much in common with honeybees, even though they do make paper nests like the wasps. They swarm like honeybees and lose their stings in the same manner. They are gentle, however, and permit one to watch them closely without resentment. I did get some severe punishment when cutting down the nest from the orange tree where they had placed it.

—ABJ—

Within a few weeks after this page reaches our readers, I will be going north again to spend the summer at the experimental apiary at Atlantic, Iowa. Letters intended for my personal attention should be addressed to me there.

—ABJ—

Mention has already been made on this page of the hardy apricots brought from Siberia by Dr. N. E. Hansen. Dr. Hansen is now working toward a perennial wheat which may revolutionize the farming practice of the arid West and remove the necessity of stirring the soil so often. Those interested in trying new things in plants should write to the South Dakota Experiment Station at Brookings for the list of plants ready for distribution.

—ABJ—

There is talk of a special trip to Mexico following the big bee meeting at San Antonio next November. In company with Dr. O. W. Park of Iowa State College, I have recently made such a trip to Monterey and want to assure any beekeeper who may attend the San Antonio convention that he will get a lot for his money if he visits Mexico on such an excursion. It is a strange and interesting country and there is much to be seen. My previous visits to Mexico had been to points near the border. This revealed the real country.

—ABJ—

There is much confusion among the beekeepers regarding the men who are in charge of research work in beekeeping in the states of Iowa and of Texas due to the similarity of their names. H. B. Parks is in charge of the Texas beekeeping laboratory near San Antonio. O. W. Park does similar work at the Iowa station. Both have been embarrassed by a recent statement in *Gleanings* that H. B. Parks was working on disease resistance at the Texas laboratory. H. B. Parks is **not** working with bee disease in any way and he is located in Texas. O. W. Park is doing such work and he is working in Iowa. I have had some interesting contacts with them both this winter, while O. W. Park was visiting in Texas and the two men became acquainted for the first time.

FRANK C. PELLETT.



NINE HUNDRED EXTRA SURPLUS QUEENS, EVERY ONE TESTED  
75c EACH, DEALER'S DISCOUNTS.

Open for immediate delivery of package bees.

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Post Office, Montegut, La.

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"WE GUARANTEE TIDEWATER LOUISIANA RED CYPRESS.  
NO SECOND GROWTH CYPRESS LUMBER."

### **Package Bees for May Rush Orders Pure Italians, a proved good worker strain.**

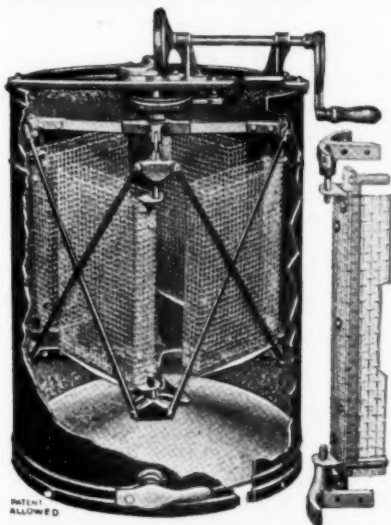
We give PROMPT ATTENTION and the experienced service of 12 years' handling packages.  
VALDOSTA offers the fastest Railway Express Service in the SOUTH to ALL POINTS NORTH.  
2-lb. PACKAGE WITH QUEEN, \$2.45; 3-lb. PACKAGE WITH QUEEN, \$3.15; PACKAGES WITHOUT QUEENS, 75c LESS.  
See page 203 April AMERICAN BEE JOURNAL for more particulars.

**CHARLES HILLOCK**

..

**VALDOSTA, GEORGIA**

## **Removable Reversible Basket Honey Extractors**



Our Style 15-4 Extractor shown here has four Removable Reversible Baskets for Standard 9 1/8-inch frames, that can be lifted up and out to clean or disinfect in boiling water. The gears are always in mesh, with ratchet crank and brake and is the easiest to turn of any four-basket extractor on the market. It is priced at \$30.00, shipping weight 130 pounds.

This is only one of ten different styles ranging from two to fifty-frame sizes. Send for printed matter.

Manufactured By

**A. G. WOODMAN CO., Grand Rapids, Mich., U.S.A.**

### **PACKAGE BEES QUALITY QUANTITY HEALTH SERVICE**

15% Discount to Approved Dealers

**GARON BEE COMPANY**

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**DONALDSONVILLE, LA.**

None but young and vigorous select laying queens. Prompt and efficient shipment.

2-Lb. Pkg. with Laying Queen . . . .	<b>\$2.45</b>
3-Lb. Pkg. with Laying Queen . . . .	<b>3.15</b>
Laying Queens, each . . . . .	<b>.75</b>
Prices from June 1st.	
2-Lb. Pkg. with Laying Queen . . . .	<b>\$1.95</b>
3-Lb. Pkg. with Laying Queen . . . .	<b>2.55</b>
Laying Queens, each . . . . .	<b>.50</b>

*The Oldest Bee Journal in the English Language*

# The American Bee Journal

ESTABLISHED BY SAMUEL WAGNER IN 1861

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